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THE HOWARD INK BLOT TEST

A DESCRIPTIVE MANUAL

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PREFACE

The set of ink blots to which this publication is a descriptive manual is not being introduced as a test purporting to be an equivalent form to any other ink blot test. It was intended to be different. Although it has many characteristics in common with the Rorschach and other Ink Blot Tests, it also has some marked differences. It is believed that some, at least, of these differences may indicate that the test is worth a fair amount of research effort by clinicians or other interested psychologists. Personally, I have a reasonable degree of confidence that it can become a more revealing instrument than other presently available tests of the kind. It is realized that this can happen only through the efforts and skills of the users. The plates and the examiner working with them really constitute the test.

Although work on these blots has been going on since 1942, it has not been possible to test, with one set of cards, sufficient numbers from various clinical groups to warrant publishing statistical findings on them. Because the number and sequence of cards used were undergoing frequent changes during seven years of this time it was thought necessary to confine most of the try-outs, and particularly the later ones, to "normal" groups. Even with the greatest care there was a limit to the amount of use to which the original set of blots could be put. That limit had about been reached by the time that a sizeable sample had been tested with the cards in their present number and sequence. Largely on the basis of the results from this sample it was finally decided to duplicate the blots.

The material presented in the following pages is based on the records of 229 adult, English speaking, Canadians, high average and above in intelligence, with an educational level of at least High School graduation and with no obviously disabling personality difficulties. Of this number 92 were women. Ages ranged from 19 to 44. About two-thirds of them were in the age range of 23 to 34. It is considered that the findings on a group such as this provide a reasonably stable frame of reference from which to view other results as they become available.

In scoring these records the methods used by Dr. Samuel J. Beck with the Rorschach Test were followed fairly closely. This was done for two main reasons. (1) It was considered that this system of scoring subscribes more closely to the law of parsimony than do most other systems. (2) It is a system which seems to provide the best way of both obtaining and retaining the perspective of a record. It is realized that these are expressions of personal opinion. There is no reason why the main characteristics of the test should not show up when scored by some other method.

It is assumed that the psychologists who will be interested in giving this set of blots a trial will be well versed in the Rorschach technique. Consequently, this manual does not attempt to outline in any great detail methods of administering the test and scoring the responses. Interpretation of some records must be left to a later volume. In the meantime, it is hoped that the blots and the manual may be of interest for research, as well as clinical, purposes.

I wish here to tender my thanks to my many colleagues who assisted in making the original mass of trial blots, to the hundreds who since have acted as try-out subjects and also to those who gave me encouragement when the task tended to grow stale. In particular I wish to thank Professor G. A. Ferguson, McGill University, who assisted in the original selection of blots and has since advised me on many important details.

J. W. H.

Montreal, January, 1953.

CHAPTER I

DEVELOPMENT OF THE TEST

This set of ink blots has grown out of work begun more than ten years ago. At that time there was developing an interest in the use of the Rorschach test as a group technique. However, it seemed that the Rorschach used in this fashion could not generally furnish sufficient material to form the basis for appraising or describing individual personalities. Its usefulness appeared to be almost entirely confined to the role of screening or rough sorting. Nevertheless, the time which could be saved by group administration impressed one as important in those days. It was decided to begin construction of another group test with a longer series of ink blots based on the premise that a greater number of blots of more sensitivity might, to some extent, overcome the weaknesses of using the Rorschach as a group test.

Almost ten thousand blots were constructed. Various qualities and colors of ink and several grades of paper were used and blots were produced having a great variety of characteristics. There was quite a range of sizes from about one quarter the size of the Rorschach test blots to those three or four times as large. These were given quick tryouts on small numbers of people to obtain some idea of the variety of determinants in responses given both spontaneously and after suggestion.

It early seemed that the greatest breadth of determinants for the responses came from those blots which were just slightly larger than those on the Rorschach plates. Size thus became an important basis of selection. Further selection was also influenced by extremes of greyness-blackness, color, white space, shapes marked off by shading in the interior of the blot, etc. A number were selected partly because of their readily noted textural characteristics. Blots which readily stimulated large numbers of responses were rejected. Those which were too difficult were also rejected. A group of 21 blots was finally chosen. Ten of these were colored. The colors were generally vivid and saturated with the primary colors well represented, although fairly large areas of browns were present in some.

The test at this stage consisted of a demonstration blot, to which suggested responses were provided, and 20 other blots to which the testee responded on specially prepared answer sheets. He was asked to state what he saw and to mark off the area in which it was seen on an outline of the blot provided on the answer sheet. A definite time limit was set for working on each blot. Although there were encouraging signs from the testing of a small number of persons in this way, and also on an individual basis, because of certain circumstances the test was not lithographed and developed further for group use.

The few individuals tested in the manner which would be applied to a group showed the usual weaknesses of using such a test in this fashion. Most of the qualitative observations were lacking and the inquiry was necessarily very restricted; consequently many of the determinants could not be adequately assessed. Quantity of diverse responses did not altogether compensate for relative lack of qualitative information.

The test seemed to be quite sensitive. Although too long for use as an individual test, it was felt that it might be worth developing further, in a shorter form, for that purpose. The demonstration blot which had been selected from the original large number was considered the easiest blot obtained in the experiment. It disturbed fewer people at first sight. Whole answers were frequently and readily given. Movement responses were easily produced. Although shading could be used this did not often seem to have as many upsetting qualities as when found in other blots. White space was readily used and certain areas of the blot were frequently chosen for detail responses. Although this blot was very seldom disturbing, and had the other characteristics mentioned, a large number of responses did not seem to evolve readily

from it, except in those cases where there was great pressure to produce in quantity. Most people tested appeared to get off to a pleasant start through it. In all it seemed like a good blot to begin a series for use as an individual test. In the various stages through which the test has passed this blot has remained as the first of the series.

In revising the test for individual use the number of cards was first reduced from 21 to 16. This was found to be still too long and the number was reduced to 14, and after further trials it was again reduced to 12, then to 10. Some re-arranging of blot sequence and exchange of cards were also made at each reduction in number. Later the number was increased to 12 blots. Several arrangements of sequence were tried with these. Try-outs indicated that a number of achromatic cards followed by three colored cards, etc., gave more strongly disturbing experience to some subjects than did a pattern of alternating single achromatic and colored cards. Some indication of how the disturbances persist could often be noted also. An asymmetrical colored blot on the card following a series of four achromatic cards presented unusual difficulty to some people.

The final arrangement for the 12 cards begins with two achromatic followed by three colored cards, the first two of which have a good deal of grey and black in them. The third of this group, or the fifth card, is all colored. These in turn are followed by four achromatic cards alternating in outline between massive black and an open, rather sprawly, type of structure. Two of the last three cards are all colored. The last one has a portion of it in grey and black although it gives a general impression of being all colored. The first one of the final series of three colored is an asymmetrical blot.

The final pattern as a whole, that is, the arrangement of groups of achromatic and chromatic cards and the sequence of the cards within these groups, was arrived at on a basis of securing variety with limited uniformity of test records. Although no particular principles became evident, as various arrangements were tried out there were noted some marked differences in the reactions to many cards depending upon which card or group of cards each followed. There was going on, in these try-outs, a search for a gestalt which presented, at many points, difficulties of several kinds for some and an easy handling of these for others. At the same time there was a search for variety within the reactions at these points. That is, if, at point A, some members of a group (preferably 5 - 15%) made a very similar reaction and the remainder of the group were well spread out, while at point B much the same thing happened but the similarly reacting members were not (with few exceptions) those reacting alike at point A, and so on at other points and to other features at the same points, then it was considered that variety was being achieved with limited uniformity. This was thought of as one aspect of test sensitivity. The tendency of the test to bring forth a fair number and range of determinants other than form was considered as another main indication of sensitivity. A third objective was to achieve the first two without using cards which too easily stimulated large numbers of responses. The last two aspects had been to quite an extent taken care of in the initial selection of blots but they remained factors in making the final selection of 12 from the 21 blots of the original test.

Although the members of the group tested with the final selection and arrangement have some characteristics in common and so are dubbed "normal", it was in no way assumed that they possessed many identical patterns of personality characteristics. Variations in test results should reflect the variations to be found interindividually. The simple statistics presented in this manual quite effectively obscure much of the variation of individual records. Nevertheless, they do indicate the main tendencies and their degrees in a group useful for some comparative purposes.

CHAPTER II

ADMINISTRATION: TIME, NUMBER AND LOCATION OF RESPONSES

The findings reported in this manual were obtained under uniform conditions of administration. Arrangements were completed for testing before the subject came into the room. That is, the cards were placed, blots downwards, in a pile in order of presentation. Stop watch, pen and paper were ready for use. The object of such preparation was to avoid distraction at the commencement of the test. Besides the examiner's chair two others were arranged, one opposite the examiner's across the desk, the other at the end of the desk and placed so that the subject when seated in it would be to the front and side of the examiner and facing in the same direction. When the subject arrived he was asked to take the chair facing the examiner. Sufficient time was then taken to put the subject at ease. When ready to proceed with the test the subject was asked to take the other chair with the explanation that that position had been found to be most convenient for both examiner and subject and that the lighting had been arranged accordingly. The following directions were then given:

> "The material we use consists of twelve cards. Each has ink blots on it. I shall hand you one card at a time. You tell me what you see in it, what it could be or it might represent to you. Be sure to tell me everything you see in it. When you have finished with a card hand it back to me and I shall give you another."

At times there may have been slight variations from this phraseology which arose from an effort to prevent the directions sounding as if they were a stiff memorized piece. The responses were taken down verbatim. Card turning was recorded by using a $\wedge$, the point indicating the direction of the top of the card. This indicated the direction of the card at the time a response was given as well as the amount of turning between responses.

Time

To avoid distraction or production of tension a stop watch with a silent stop and go action was used. At the moment when the subject took the card the watch was started. It was stopped when the card was handed back or laid on the desk. The times for each card were recorded in the margin of the record. From these the average time per response for each card and for the record as a whole were readily computed. The time at which the subject began to formulate his first response to each card was also recorded. The time for first response was obtained by subtracting from this the time of presentation of the card. In those cases where the subject hesitated, gave long qualifications or went off on a tangent before coming out with the response proper a second timing was noted at the moment the actual content appeared. In these cases the time for first response was computed from the time the card was presented until this second timing. The distributions of average time per response and time for first response for each card are shown in Table 1. The mean time for first response for all cards was 19.6 with S.D. 17.7. The order of the cards in decreasing value of the mean of time for first response was X, VI, XII, XI, IX, II, IV, VIII, VII, V, I, III.

If a subject tried to return a card without making a response, or after having given only one response, he was encouraged to try again. This applied to the first six cards. Such encouragement was not continued after two minutes for any card.

After the subject had returned the last card he was asked to turn his chair and face the examiner across the corner of the desk. The inquiry regarding locations and

TABLE 1. DISTRIBUTIONS OF AVERAGE TIME PER RESPONSE AND TIME FIRST RESPONSE

Average Time Per Response		Time Required For First Response											
Score Intervals	N	Score Intervals	CARDS I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
16–20	6	1–5	68	33	47	28	44	6	33	29	16	19	28	19
21–25	17	6–10	69	46	79	50	53	44	67	47	77	26	29	50
26–30	29	11–15	19	45	46	27	40	45	29	59	35	25	33	42
31–35	32	16–20	23	19	14	28	27	26	33	36	15	26	42	25
36–40	30	21–25	16	24	16	24	16	21	14	11	19	26	34	24
41–45	32	26–30	16	16	13	28	11	23	18	5	17	23	18	11
46–50	22	31–35	3	18	2	14	10	18	9	9	16	6	13	8
51–55	16	36–40	4	4	4	12	12	15	4	12	3	7	7	12
56–60	15	41–45	2	2	4	3	9	12	5	5	6	8	5	6
61–65	10	46–50	4	0	3	3	0	3	6	6	6	6	3	3
66–70	8	51–55	2	2		4	2	3	4	3	0	10	3	4
71–75	3	56–60	3	3		3	2	3	3	2	4	8	1	3
76–80	2	61–65		5		3	0	1	0	1	5	3	1	3
81–85	3	66–70		3		0	0	2	3	0	1	6	3	3
86–90	0	71–75		3		0	1	0		1	5	2	0	4
91–95	2	76–80		4		1	1	0		2	0	0	1	3
96–100	1	81–85		0		0		3		0	0	3	1	0
101–105	1	86–90		0		1		3		0	3	0	1	3
		91–95		0				0		0		3	2	
	229	96–100		0	*1			0		0		1	0	
		101–105		1				0		1		0	0	
		106–110		1				0				2	0	
		111–115						1				3	0	
		116–120										0	0	
		121–125							*1			1	1	
		126–130										2		
		131–135												
		136–140												*1
		141–145												
		146–150											*1	
		201–205										*1		
		211–215									*1			
		N	229	229	229	229	228	229	229	229	229	217	227	224
Mean	43.35	Mean	13.3	20.8	12.7	20.1	16.6	24.4	17.4	18.3	20.8	31.0	21.2	22.4
		Median	9.4	14.9	10.3	17.7	13.1	19.8	13.5	14.3	14.1	23.4	18.8	16.2
S.D.	15.40	S.D.	12.0	19.0	9.9	14.9	13.6	17.9	14.2	15.5	18.2	26.8	16.4	19.1

*Not used to calculate mean and S. D.

TABLE 2. DISTRIBUTIONS OF NUMBER OF RESPONSES TO EACH CARD

TOTAL Score Intervals	N	Score	CARDS I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
11–15	3	0					1					12	2	5
16–20	24	1	31	42	35	29	16	41	32	48	32	68	28	28
21–25	23	2	84	54	49	48	39	75	43	54	75	52	63	39
26–30	22	3	53	71	47	58	59	50	50	34	47	40	58	29
31–35	27	4	25	31	44	31	45	31	26	29	31	22	23	37
36–40	39	5	9	15	28	30	37	13	33	35	17	11	11	37
41–45	21	6	9	6	10	12	18	10	19	12	13	12	18	13
46–50	24	7	9	6	6	13	4	3	6	6	3	5	4	10
51–55	10	8	6	2	2	6	3	1	8	3	4	1	9	11
56–60	9	9	3	1	3	2	5	4	4	3	3	2	4	6
61–65	3	10		0	3		1	1	3	2	2	1	2	4
66–70	6	11		0	1		0		3	2	1	1	1	2
71–75	3	12		0	0		0		2	0	1	2	2	3
76–80	4	13		1	0		0			0			3	2
81–85	2	14			0		0			1			1	1
86–90	3	15			1		0							2
91–95	1	16					0							
96–100	2	17					0							
101–105	2	18					0							
106–110	0	19					1							
111–115	0													
116–120	0													
121–125	0													
126–130	1													
	229	N	229	229	229	229	229	229	229	229	229	229	229	229
Mean	40.5	Mean	3.03	2.96	3.45	3.50	3.80	2.90	3.84	3.36	3.20	2.68	3.61	4.30
Median	38.0													
S.D.	19.0	S.D.	1.81	1.68	2.15	1.93	2.03	1.72	2.36	2.50	2.0	2.12	2.59	2.91

determinants was then begun. This always dealt with the cards in the reverse order. Every effort was made to conduct the inquiry with the necessary persistence to obtain assurance of the kind, quality and degree of determinants. The use of leading questions or other suggestive verbalizations was consciously guarded against and avoided as far as possible.

Number of Responses and Location Areas

The portion of the blot used for each response was described on the record during the inquiry. These were later used to determine the order of frequency of the areas used. In Appendix 1 these areas selected for use in each card are distinguished as details and rare details. They are numbered in decreasing order of frequency of responses given to them. Where white space alone was used it was treated as if it were a part of the actual blot. Consequently, there are a number of details which are white space. Some of the rare details are also white space. To score these otherwise would, in many cases, change the approach formula in an unwarranted fashion. Where white space was used, either in these or other cases, the letter s was added to the symbols, D and Dd, for detail and rare detail locations.

In distinguishing between detail and rare detail areas a simple procedure was adopted. The number of responses to each area was tallied. The areas were then arranged in order of decreasing frequency for each card. Except in Card X there was a sharp drop in the use of an area compared to the next most frequently used. This reduction varied from about two-fifths to one-fifth. These points of sharp decrease were used to mark the beginnings of the rare detail areas. In the case of Card X there was no marked falling off at any place in the list of areas used. Consequently an average from the rare detail responses of the other eleven cards was computed. This, with a slight adjustment to allow for the somewhat lower productivity on Card X, was used to fix a point of division.

The distributions of number of responses obtained from total records and from each card are shown in Table 2. In a few cases new associations were made in the inquiry. While these were noted they were not included in any tabulation of number of responses.

Whole Responses and Approach Formula

In most cases there was little question regarding the scoring of whole responses. When the response was being given and the subject spontaneously mentioned the omission of certain edge or corner areas the response was not scored W. If, however, the subject tried to make his response more acceptable in the inquiry, by cutting off certain areas, an effort was always made to determine whether this had been a corrective after-thought or represented his use of the blot at the time of giving the response. Very much more often it was the former and when such was the case the response was scored W. The only exception to this was in the third card. Here, if the small detached areas of red at the bottom centre of the blot were omitted, for any reason, and the remainder of the blot used the response was scored W.

There was found to be a considerable range of difficulty in the production of whole responses to the various cards. The order of the cards in which whole responses occurred from most to least, with the percentages of the total of such responses in each card was as follows:

Card	II	I	VI	V	VIII	III	X	XI	IV	VII	IX	XII
%	15.3	15.0	13.4	10.1	9.9	7.5	6.1	5.8	5.2	5.1	4.2	3.4

After the detail and rare detail areas had been determined, as outlined above, the records were re-scored to determine the number of detail and rare detail areas used in each record. Table 3 shows the distributions of whole, detail and rare detail selections in the 229 cases.

TABLE 3. DISTRIBUTION OF LOCATION OF RESPONSES

WHOLES		DETAILS		RARE DETAILS	
Score Intervals	N	Score Intervals	N	Score	N
1–3	19	6–10	21	0	15
4–6	59	11–15	40	1	42
7–9	54	16–20	27	2	46
10–12	39	21–25	30	3	38
13–15	36	26–30	28	4	20
16–18	7	31–35	34	5	16
19–21	4	36–40	20	6	10
22–24	4	41–45	10	7	7
25–27	5	46–50	7	8	8
28–30	1	51–55	3	9	4
31–33		56–60	1	10	3
34–36		61–65	2	11	4
37–39		66–70	3	12	4
40–42		71–75	2	13	2
43–45		76–80	1	14	3
46–48	*1			15	2
				16	0
	229		229	17	2
				18	0
				19	1
				20	1
				:	
				39	*1
					229
Mean	9.4	Mean	26.5	Mean	3.99
Median	9.0	Median	25.3		
S.D.	5.7	S.D.	14.0	S.D.	3.79

*Not used to calculate mean and S.D.

Since the mean number of responses (R) for the sample was 40.5 and the means from Table 3 for W, D and Dd are 9.4, 26.5 and 3.99, a suggested basic approach formula is

$$10W + 27D + 4Dd = 41R.$$

CHAPTER III

COLOR AND MOVEMENT

COLOR

Apart from the statistical evidence of the use of color as a determinant of associations there appeared to be, in many cases, a more vigourous reaction than one would expect to find in giving the Rorschach test to a similar group. Expressions of pleasure and displeasure, criticisms of color combinations, rejection of color and exclamations of surprise were fairly frequent. The use of color as a location description was about at expectancy. In two cases there was color naming.

In scoring for color as a determinant, the original Rorschach formulation was adhered to. Where form had no part in determining the association the symbol for pure color, C, was used. Where form was used as a secondary or minor determinant

the score given was CF. Where the form was dominant the response was scored FC. Decisions in regard to the score were made on the basis of spontaneous expressions in the test proper and careful inquiry. As experience with the test increased it may have been that it influenced the score given to some responses. A conscious effort was made not to rely on this experience. As is usual with this determinant, differentiation was difficult in many cases even after the most careful and exhaustive inquiry. Some indication of the relative frequencies of color determined responses made to the various cards is shown in Table 4. The distributions of color determined responses appear in Table 5.

TABLE 4. THE PERCENTAGES OF COLOR DETERMINED RESPONSES

Cards	III	IV	V	X	XI	XII
Total	12.1	6.7	26.2	12.3	18.0	24.7
FC	.8	2.5	9.9	3.5	6.9	10.6
CF	6.6	3.6	12.2	4.7	7.4	11.3
C	4.7	.6	4.1	4.1	3.7	2.8

CARDS ARRANGED IN DESCENDING ORDER OF FREQUENCY OF COLOR DETERMINED RESPONSES

Total	V	XII	XI	X	III	IV
FC	XII	V	XI	X	IV	III
CF	V	XII	XI	III	X	IV
C	III	V	X	XI	XII	IV

TABLE 5. DISTRIBUTIONS OF AFFECTIVE INDEX AND COLOR DETERMINED RESPONSES

Affective Index Ratio Intervals	N	Score	Color Total	C	CF	FC
.16–.20	1	0		80	35	33
.21–.25	1	1	12	59	45	59
.26–.30	9	2	20	60	39	60
.31–.35	21	3	21	17	39	40
.36–.40	22	4	31	8	30	18
.41–.45	25	5	32	5	24	18
.46–.50	30	6	36		15	1
.51–.55	24	7	12		2	
.56–.60	24	8	12			
.61–.65	15	9	13			
.66–.70	16	10	18			
.71–.75	14	11	9			
.76–.80	7	12	5			
.81–.85	9	13	6			
.86–.90	7	14	1			
.91–.95	2	15	1			
.96–1.00	1					
1.01–1.05	0					
1.06–1.10	1					
N	229	N	229	229	229	229
Mean	.54					
Median	.52	Mean	5.93	1.25	2.55	2.04
S.D.	.17	S.D.	3.15	1.23	1.85	1.45

When color responses were given the usual Rorschach values of 0.5 for FC, 1.0 for CF and 1.5 for C, the mean sum of such color values for each record was 5.4. These values may need adjusting for the computing of the Experience Balance but for the present are used as outlined below.

There was considered to be a sufficient proportion of color in Card XII to warrant including it with the all colored cards in computing the ratio between the total number of responses to the colored cards and the total number of responses to the remaining cards of the test. Although the effect of achromatic areas in Card XII raises a number of problems which become apparent in individual cases there did not appear to be any general reduction in productivity in most instances where color seemed to be stimulating to productivity. Neither did the reverse seem to be true. These are observations made in the use of the test and are not based on purely statistical evidence. Ratios worked out on several other divisions of the cards did not appear to yield as useful results. The Affective Index distribution appears in Table 5. These are the ratios between the sum of responses to cards V, X, XI and XII and the sum of responses to Cards I, II, III, IV, VI, VII, VIII and IX.

Movement

Distributions of the total movement responses in each record and of those given to each card are shown in Table 6.

Movement was scored by following Beck's methods as closely as possible. Unless the association and/or the inquiry provided adequate justification for the scoring of M it was not so scored. A somewhat greater proportion than expectancy of human content was found not to be M. The mean number of human content responses was 11.6 while the mean number of M was 6.9. The latter figure, of course, includes those cases where M was scored for animal content and the very few cases of abstract and inanimate object movement which warranted the M score. Animal content warranting M scores appeared to be somewhat less than one would expect to find in Rorschach test records of a similar group. This is only an impression as no statistics were compiled. If it is a correct impression it might be accounted for, at least in part, by the fact that the animal content percentage was much lower for this test than has been reported for "normal" Rorschach records. At least it can be argued that animal content is probably not quite so easily given in this test and therefore some persons do not so readily clothe their wishful fantasy in animal form.

To Cards I and VII, particularly, there were a number of cases who responded with "fingers pointing" associations. Despite the verbalization, inquiry indicated that somewhat more than half of these should not be scored M. There appeared to be a somewhat undue expectancy of M in Hd responses in Card VII, and to a lesser extent in Card XII. Inquiry seemed to confirm that these were frequently as much a function of the possibilities of the card as a reflection of a psychic constriction in the subject. They probably ought to be viewed leniently in this light unless the inquiry and other indications point to the contrary.

In attempting to arrive at a useful formula to express the Experience Balance, considerable difficulty arose as to the significance of any statistical data which could be presented. A reduced ratio of M to sum of color is a weak approximation in most cases. Moreover, it is probably unsound to assume that averages derived from such data are meaningful. After trying out several arrangements it was decided to discard all of them. It is considered that until data are available from other groups, especially the obsessive-compulsive, no very firm position should be taken in regard to weighted values of Movement and Color responses for this formula. In the meantime it is suggested that the usual weights for color responses be used and movement responses be multiplied by three-quarters.

TABLE 6. DISTRIBUTIONS OF MOVEMENT RESPONSES

TOTAL			CARDS										
Score Intervals	N	Score	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
1–2	37	0	72	184	50	172	133	152	128	74	54	139	128	175
3–4	46	1	126	35	140	36	66	63	78	129	112	61	81	25
5–6	49	2	25	9	24	16	20	13	20	26	47	26	20	20
7–8	25	3	4	1	10	3	9	1	2		16	3		8
9–10	22	4	1		4	2	1		1					0
11–12	23	5	1		1									1
13–14	7													
15–16	9													
17–18	8													
19–20	3													
	229	N	229	229	229	229	229	229	229	229	229	229	229	229
Mean	6.9	Mean	.86	.25	1.04	.37	.60	.40	.56	.79	1.11	.53	.53	.41
Median	6.3													
S.D.	4.8	S.D.	.76	.54	.87	.75	.84	.62	.73	.63	.84	.75	.65	.85

CHAPTER IV

LIGHT DETERMINED AND INTERIOR FORM RESPONSES

Texture, Vista and Shading

The distributions of these responses appear in Table 7. The relative frequencies of their occurrence in the several cards are noted below. The light determined responses include texture, vista and the more or less flat surface shading (Beck's Y) responses. Interior form responses are probably closely related.

Table 7. Distributions of Light Determined and Interior Form Responses

Score	Texture	Vista	Shading	IF
	N	N	N	N
0	114	116	33	124
1	65	63	44	55
2	25	10	33	22
3	21	13	36	10
4	3	12	30	11
5	1	5	16	7
6		6	16	
7		2	9	
8		1	6	
9		0	2	
10		1	2	
11			2	
N	229	229	229	229
Mean	.85	1.15	2.99	.86
S.D.	1.06	1.76	2.42	1.31

The manner of scoring texture responses may need a word of explanation at this point. As it is a light-determined response, the chief difficulty is in distinguishing it from the ordinary flat surface shading response. Even the use of the word "texture" by the subject by no means ensures that he is giving a texture response as scored here. The inquiry generally had to be very thorough and non-suggestive. Responses were seldom scored texture as a determinant unless there seemed to be good evidence that the subject felt either attracted to, or repelled from, contact with the surface of the material given as content. The near departures from this were where the subject indicated that the surface appeared to be what he had named it because "it looks as if it would feel" like it. Here neither the attraction nor repulsion was necessarily strong but there often seemed to be just enough to warrant the texture scoring. Responses giving fur, velvet, etc., were frequently, but not always, considered as being determined by texture.

The order of the cards in which texture responses occurred from most to least with percentages of the total of such responses given in each card is as follows:

Card	VI	IV	X	XII	XI	III	II	VIII	V	VII	IX	I
%	37.1	13.0	12.9	11.2	8.0	4.9	4.8	3.3	3.2	1.6	0.0	0.0

The order of the cards in which vista responses occurred from most to least, with percentages of the total of such responses given in each card is as follows:

Card	VI	VIII	III	IX	VII	IV	II	X	XI	XII	I	V
%	20.8	14.3	9.1	9.0	9.0	7.8	7.7	6.6	5.3	3.9	3.8	2.7

The following is the order of cards in which flat surface shading (Y) responses occurred from most to least, with percentages of the total of such responses given in each card:

Card	VI	II	IV	III	VIII	VII	XII	XI	IX	X	I	V
%	22.3	14.9	12.6	11.6	8.8	6.9	6.1	5.6	3.7	3.3	3.3	0.9

The light determined responses were scored after the fashion of the color determined responses. That is, if no form entered into the determinant the appropriate symbol was used alone, when form was present F was placed before the symbol or after it depending upon the relative dominance. In this sample pure texture did not appear and there were only three cases in which form was not the stronger part of the determinant. A similar, but not so marked, trend was present in the vista responses. There were three examples of pure vista and fifteen when vista was dominant over form. In the case of shading, form is apt to be much less dominant. Approximately three and one-half percent of shading responses had no form element and in twelve percent the form element was weaker or secondary. Special problems of assessing the relative dominance of form in these responses sometime occur when one is a blend with another or with movement, color or interior form. As these are of considerable importance in interpretation time spent in clarifying them in the inquiry is seldom wasted.

Interior Form

A type of determinant occurring with some frequency in seven of the cards has seemed to warrant the use of a new scoring symbol. Where a location area of no very definite contours is selected and the content is mainly determined because of fine interior markings, no one of which represents a unique feature or object complete and isolated in itself, I have called the determinant "Interior Form" (IF). Examples of this kind of response are "A mossy bank", "A patch of heather on a hill side", "Weathered rock. You can see the sharp edges sticking up where the softer material has worn away in between", "A piece of burled walnut". In a few cases the outside or contour form is a partial determinant along with the Interior Form. Among these are some "coral" and "rock" responses.

The location is almost always rare detail, although the area selected does sometimes coincide with a detail area. This, however, seldom has much to do with the outline shape of such an area. The response is by no means the same as that arising from the selection of a tiny inside detail nor of several such details together. It is not so diffuse that one would appear to be justified in neglecting the form element and labelling it solely as some kind of light determined response.

Careful inquiry indicates that the shapes of many small markings taken together give an effect which reminds the subject of the content he expresses. To this extent form is used, but the determinant does not depend on general over-all shape, consequently these responses are not tallied with the pure form responses. No attempt has been made to differentiate them with a plus or minus sign. There seems no doubt that there is a wide difference in quality between some of these responses. For instance a response such as "Asparagus tips, cut off and left lying around" is qualitatively far from "A pine forest as you'd see it from an aeroplane". Labelling with a plus or minus sign would not seem to add much to the significance of the response for computing purposes.

In a small number of cases it has been found as a blend with flat surface shading. Approximately 32% of the IF responses found in this sample were blends with other determinants. These were chiefly vista or color and occurred with almost equal frequency. In one response the blend was with texture.

The order of the cards in which interior form responses occurred from most to least, with percentages of the total of such responses given in each card is as follows:

Card	IV	VI	XI	XII	III	VIII	X
%	24.2	22.7	18.2	13.7	12.1	4.6	4.5

CHAPTER V

FORM AND POPULAR RESPONSES. ORGANIZATION SCORE

Form as the Sole Determinant

Because the proportion of pure form responses tends to be low, it is all the more necessary to score them plus or minus in the most careful manner. The information available at this stage regarding plus or minus form responses is not sufficient to allow for the compilation of an extensive list of such responses. Those which are included in this publication are those about which I feel reasonably sure. But I am prepared to shift the sign on many of them in the light of more experience. Some of the F minus responses listed were obtained from the few pathological cases given this test. This is the only test material included in this manual which did not come from the records of the "normal" group. The list appears in Appendix 2.

The distribution of F plus responses appears in Table 8. In scoring plus or minus for the form determinant, judgment depended upon past experience in scoring the Rorschach test. This may appear like subjectivity with a vengeance. However, a certain consistency was maintained. A list of both plus and minus responses was accumulated as the scoring progressed. Changes of opinion were recorded and earlier scored records were revised accordingly. Experience with the test together with information gained from some extra-normal cases increased the feeling of assurance in dealing with this problem. Whether this feeling was justified remains to be seen.

The lambda index or the percentage of pure form determined responses of the total number of responses was calculated for all records. The distribution of these percentages is shown in Table 8.

Table 8. Distribution of F Plus Percentages and Lambda Indices

% Intervals	F plus percent	Lambda Index
21–25		4
26–30		3
31–35		13
36–40		16
41–45		27
46–50		19
51–55		33
56–60	12	47
61–65	21	25
66–70	26	21
71–75	33	15
76–80	34	6
81–85	44	
86–90	31	
91–95	16	
96–100	12	
N	229	229
Mean	78.15	53.8
Median	78.31	55.9
S.D.	10.55	12.4

Popular Responses

It was at first decided that a response warranting the scoring of popular should meet two criteria. First, that the content should appear three times as often, for a given location, as the next most frequently given content for the same location. Second, that the content should be given for that location by at least twenty percent

of the group tested. Later this required percentage was reduced to eighteen. On the basis of these two criteria eighteen popular responses were obtained. These, together with their locations, appear in Appendix 3. The distribution of popular responses in the various records are shown in Table 10.

Organization Score

Using the rules given by Beck for scoring Z in the Rorschach Test, the records were searched for the presence of organization activity. Where these occurred, they were tabulated and frequencies of the various kinds from each card were obtained. All kinds of white space organizations with detail were grouped under one heading. On the basis of these frequencies, and taking a base value of 1.0 for a whole response to Card II, relative values to the nearest half unit were computed. These are furnished in Table 9. The mean score for the sample was 38.1, S.D. 24.2.

These values are presented on a tentative basis. A much more reliable set of findings could be produced from the records of a specially selected group of very intelligent and superior subjects. More adequate statistical treatment of data from such records might also bring to light other organizational features. However, it is considered that the values given here should prove useful until more reliable ones can be obtained.

Table 9. Values for Computing the Organization Score

Card	Whole	Whole with Detail	Adjacent Detail	Distant Detail	White space With Solid
I	1.0	2.0	5.0	3.0	3.5
II	1.0	6.0	4.0	6.5	3.0
III	2.5	3.0	3.5	2.0	5.0
IV	2.5	5.0	3.0	3.5	5.0
V	1.0	4.5	2.0	3.5	6.0
VI	1.0	3.5	4.5	5.0	6.5
VII	3.0	4.5	3.0	3.0	2.5
VIII	2.0	2.0	3.5	4.0	5.0
IX	3.5	5.5	3.0	3.0	1.5
X	2.0	6.5	3.5	4.0	5.5
XI	2.0	7.0	3.0	3.0	7.0
XII	4.0	7.5	2.0	3.0	7.0

Table 10. Distributions of Animal, Popular and White Space Responses

Animal Responses % Interval	N	Score	Popular Responses	White Space Responses
16–18	7	0		27
19–21	18	1		63
22–24	33	2		26
25–27	33	3	2	25
28–30	31	4	38	21
31–33	39	5	50	22
34–36	26	6	57	14
37–39	12	7	36	12
40–42	12	8	20	10
43–45	8	9	17	6
46–48	4	10	6	2
49–51	3	11	2	1
52–54	3	12	1	
N	229	N	229	229
Mean	30.35	Mean	6.15	3.13
Median	30.6			
S.D.	7.7	S.D.	1.71	2.63

CHAPTER VI

HUMAN, ANIMAL AND WHITE SPACE RESPONSES

There was a slightly greater incidence than expectancy of human detail responses. Mention has been made of some of the possible implications of this in Chapter III. Whether this incidence is mostly due to the character of the blots is not known. The range of these responses shown in Table II might seem to indicate otherwise.

TABLE 11. DISTRIBUTION OF HUMAN RESPONSES

Score Intervals	Total	Score Intervals	Whole Human	Human Detail
1–3	14	0–1	14	50
4–6	42	2–3	30	53
7–9	57	4–5	76	38
10–12	37	6–7	39	43
13–15	26	8–9	29	11
16–18	19	10–11	13	8
19–21	9	12–13	12	5
22–24	9	14–15	6	7
25–27	4	16–17	4	6
28–30	6	18–19	4	3
31–33	2	20–21	1	2
34–36	2	22–23	1	1
37–39	1	24–25		1
40–42	1	26–27		0
		28–29		0
		30–31		1
N	229	N	229	229
Mean	11.6	Mean	6.5	5.3
Median	10.1	Median	5.8	4.6
S.D.	7.4	S.D.	4.2	5.1

The animal content responses, as reported here, include both whole animal and animal detail responses. The relatively low production of animal responses probably reflects, to some extent, the stimulating character of the blots. At any rate they do not seem to be as readily given in this test as in the Rorschach test. The distribution of animal content percentages appears in Table 10.

For purposes of the record summary all white space responses were totalled together. Interpretative significance may vary according to the way in which areas of white space chosen for use occur, but the over-all resistive or contrary trends of the personality are reflected in the total, either as the Sum or percentages of such responses. The distribution of these responses are shown in Table 10. When these were calculated as percentages of total responses for each record the mean was 7.44, S.D. 5.54.

CHAPTER VII

SUMMARY

The twelve blots of the Howard Ink Blot Test were selected from the twenty-one blots of a test which had been constructed for group administration. This earlier group test consisted of one demonstration blot and twenty blots. It had been constructed with the hope that quantity of responses, including many determinants other than form, would, to some extent, compensate for lack of the qualitative findings which can be obtained in administering such a test individually. The blots for the group test were chosen from a very large number, the main basis of selection being that the blots elicitated a good range of determinants without at the same time stimulating large numbers of responses. After a brief trial it was decided to revise the group test for use as an individual test.

The original test of twenty-one cards had been arranged without much investigation into the effect on responses to individual cards of the card or cards preceding each in the series. In arriving at the present selection and arrangement of twelve blots, an attempt was made to take this effect into account and to capitalize on it as much as possible.

When the point was reached where little would be gained by further substitution and rearrangement of cards, it was decided to test a "normal" or non-clinical group of adults. The group is considered to be of sufficient size to provide a reasonably reliable set of descriptive statistics with which individuals or other groups can be compared. This normal sample consists of two hundred and twenty-nine cases. The test was administered to these cases and the records scored in a uniform and consistent manner.

While developing this test there was always the temptation to correlate specific or narrow test findings against personality traits, defence mechanisms, psychiatric descriptive terms, etc., and to select or arrange blots in ways which seemed to strengthen (or which one hoped would strengthen) the ability of the test to indicate such personality variables. However, it was not considered that this would lead to increased sensitivity of the test. It could, indeed, have resulted in cutting down on the variety of stimulation in various ways. The premise was adhered to that it is only after one has produced a test which adjusts certain ratios and increases, and spreads out characteristics on which one depends for interpretation, that it may be assumed dynamics of a personality might be more fully and accurately inferred from a test record.

When one speaks of expectancy of findings in a test such as this, one is comparing Rorschach results (scored in a similar manner) with a more or less comparable group. It is not our intention to make specific comparisons with Rorschach data published by various investigators. However, there are certain differences of special interest which may be expressed in general terms and averages.

The average time of first response is much shorter and there would appear to be somewhat greater variability from card to card. Even when allowing for the extra number of cards, there is a slightly higher number of responses, with the number of whole responses also being somewhat higher. The average time per response is lower but probably not significantly so. White space responses are considerably more frequent.

With the exception of vista, light determined responses are more frequently employed. A type of response, which is likely a variety of light determined response, occurred with sufficient frequency to warrant scoring it separately. It has been called interior form (IF), but a more appropriate label may be needed to describe it. It occurs in Rorschach records but much less frequently.

The total of color responses is higher and there is a different proportion between those determined solely by color, those determined by color with form as a secondary or weaker determinant, and those determined primarily by form with color secondary. Despite this difference of stimulation the affective index is lower. This lowering becomes even more apparent when one considers that in this test the affective index is computed by comparing four cards against eight while in the Rorschach test the comparison is three to seven.

Movement responses appear much more frequently. Movement in human detail responses is somewhat higher than expectancy. There is a good deal of variation in the incidence of these responses in the various cards. Because of the peculiarities in both color and movement responses it is likely that the usual method of indicating the Experience Balance for a Rorschach record may not be appropriate for this test. Until more evidence is available, a suggested formula for this is .75M /sum C, where sum C is weighted in the usual Rorschach method.

Because of the greater incidence of determinants other than form, the percentage of pure form responses of the total number of responses is lower. However, there is little difference in the percentage of F plus responses. The number of popular responses is not significantly different from the Rorschach. Human content responses are higher. This is especially the case with human detail responses. Animal responses are significantly lower and the distribution much narrower.

Location areas for detail and rare detail responses are numbered according to the frequency with which they were chosen. They are described in Appendix 1. As more information on the test accumulates a few of these areas may have to be switched from one category to the other, and certainly there will be a few rare detail areas to be added. It is not anticipated that this will cause any significant change in the approach formula although if a larger normal group were used as the statistical basis and a greater number of people of less intelligence and lower education were included it is likely that the proportion of whole responses would be somewhat decreased.

The lists of F plus and F minus responses given for the various location areas in Appendix 2 consist of those about which a certain amount of confidence is felt in so far as the plus or minus scoring is concerned. They represent a sample of responses which it is considered will give users of the test a frame-work on which to begin to score new records.

The table provided for computing organization scores is tentative only. It is considered that it may be useful in this form but more reliable values need to be worked out from records of a group selected for superiority. More adequate statistical procedures should also be employed.

APPENDIX I

LOCATION AREAS

CARD I

Details:

D 1. Top half of upper long projection (about 1½ inches).
D 2. Half blot, less all of upper long projection.
Ds 3. Entire white center.
D 4. Half blot or D 1 and D 5.
D 5. Upper long projection.

Rare details:

Dds1. Large side projection of Ds3 (into D 2).
Dds2. Both Dds1 as one unit.
Dd 3. Darker shaded portion across bottom of D 2.
Dds4. Upper three-quarters of center white.
Dd 5. Upper half of D 2.
Dd 6. Upper, outer projections of D 2.
Dd 7. Projection into center from Dd 3.
Dd 8. Dark portion of D 5.

CARD II

Details:

D 1. Lower darker portion across blot.
D 2. Upper half of center (about 1 inch in width), with or without use of white in Ds5.
D 3. Upper lighter portion of blot or whole blot less D 1.
D 4. Dark three pronged figure in center.
Ds 5. Center White.
D 6. Lower center (about 1 inch in diameter).
D 7. D 2, D 4, and D 6 as one unit. Ds5 may also be used.

Rare details:

Dd 1. Upper and outer end of blot (edge to about 1 inch in depth).
Dds2. Side-center white.
Dd 3. Upper edge to side of D 2, about 1½ inches.
Dd 4. Upper side center edge, between Dd 1 and Dd 3.
Dd 5. Dd 4 and all or part of Dd 1 to about 1 inch in depth.
Dd 6. Lateral half of D 3.
Dd 7. Lateral half of D 1.
Dd 8. Top center projection.

CARD III

Details:

D 1. Upper side lighter grey figures (one or both together).
D 2. Upper half of D 1 (usual head of figure).
D 3. Inner, lower portion of D 1 (may include up to about 2 inches in depth).
D 4. Lower center red, all or lighter red only.
D 5. Center below white (usually from 3 to 5 inches across and may include D 4).
D 6. Most of blot below D 1 and usually includes dark portion extending up outer side of D 1.

D 7. Center projection, usually extending into center of D 5.
D 8. Dark portion of center projection.
D 9. D 5 and D 7.

Rare details:

Dd 1. Side lower dark portion. Extends from center line or near center line to side of blot.
Dd 2. Outer lower corner.
Dd 3. Upper, outer dark portion of D 2.
Dd 4. Lower, inner portion of D 3.
Dd 5. Red area over black in Dd 1.
Dd 6. Inner, lighter grey (usual face) of D 2.

CARD IV

Details:

D 1. Lower grey.
D 2. Red, half or all together. May include D 6.
D 3. Black, may include D 5.
D 4. Upper outer projection of red.
D 5. Center grey going into red.
D 6. Small top center blacks, on and above red, one or both together.
Ds 7. Lower center white with or without Dd 2.
D 8. Lateral half of D 3.
D 9. Lower center projection.
D 10. D 2 and D 8.
Ds 11. D 5 and Ds7.
D 12. D 1 and D 3. May also include Ds7 and D 5.

Rare details:

Dd 1. Lateral half of D 1.
Dd 2. Small grey areas in Ds7.
Dd 3. Lower half of D 8.
Dd 4. Upper half of D 8.
Dd 5. Shaded area in Dd 1, usually seen as a rabbit.

CARD V

Details:

D 1. Top blue.
D 2. Lower red.
D 3. D 2 and D 5.
D 4. Side red between green areas, may include D 11.
D 5. Central area above D 2 and up to center of green area.
Ds 6. Side interior white between D 4 and green area.
D 7. Upper side green above D 4.
D 8. Lower, heavy projection on one side of D 2.
D 9. Light blue in lower part of D 5.
D 10. Red over green below D 4.
D 11. Lateral half of D 2.
D 12. Center green.

Rare details:

Dd 1. Top center blue below D 1.
Dd 2. Lower, outer green below D 4.
Dd 3. Dark blue diagonally across each side of D 1.
Dd 4. Upper side projection of D 2. Above D 8.
Dd 5. Darker portion of D 5.
Dd 6. Small blue areas, at top D 5.

CARD VI

Details:

D 1. Both lower center projections taken together, may extend into body of blot about one inch.
D 2. Side area extending top to bottom of card and usually cutting directly across darker shaded portion.
D 3. One or both of lighter shaded portions at top center between outer corner projections.
D 4. Whole center including D 1 and D 3.
D 5. D 3 plus area below bounded by lighter lines and extending about one third of the way down the blot.
D 6. Outer top corner projection. Usually including lighter area.
Ds 7. White between halves of D 1.
D 8. Large very dark area lateral to the light lines indicated as part of boundary of D 5.

Rare details:

Dd 1. Lighter shaded portions of D 3 near center line. One or both sides used.
Dd 2. Lower outer projection. May extend about 2 inches from bottom of blot.
Dd 3. Spot at center of blot.
Dd 4. Light lines indicated as part of boundary of D 5.
Dd 5. Dark area between Dd 4.
Dd 6. Dark area just above Ds7 and below Dd 3.

CARD VII

Details:

D 1. One or both top center blots.
D 2. Outer blots, lateral to D 1.
D 3. Lower blot.
D 4. Inner of middle three smaller blots.
D 5. Upper and outer of middle three smaller blots.
D 6. Lower of middle three smaller blots.
D 7. Inner one third of D 3.

Rare details:

Dd 1. Inner half of D 7.
Dd 2. Projections from top inner side of D 1.
Dd 3. Upper, rounded largest projection near top center of D 3.
Dd 4. Projections toward center line from bottom of D 1.

CARD VIII

Details:

D 1. Top center. Larger, oval areas. One or both areas used.
D 2. Upper, outer, rounded projections.
D 3. Both lower center projections. May include some of blot toward Ds7.
D 4. Dark portion below D 1. May include dark area under D 2.
D 5. Lateral half of blot, sometimes omitting half of D 1.
D 6. Lower lateral large black area. May include part of D 3 and Dd 5.
Ds 7. Upper, inner white.
Ds 8. Lower, inner white.
Ds 9. Ds7 and Ds8 with black area between.
D 10. D 1 and D 4.

Rare details:

Dds1. White between D 3.
Dd 2. Darker portions near top of D 1.
Dd 3. Dark area between Ds 7 and Ds8.
Dd 4. Larger projection lateral to D 3.
Dd 5. Light areas to sides of Ds8.

CARD IX

Details:

D 1. Either or both top blots.
D 2 or Ds2. Lower, centre portion of blot. Does not include side areas nor curled areas at lower outer corners. Often includes all white in lower center.
D 3. Side blots. Sometimes includes small rounded blots just above.
D 4. Top center; small blots curved toward each other at top.
D 5. Top lighter shaded portion of D 1.
D 6. Curled areas at lower outer corners of D 2.
D 7 or Ds7. D 2, D 3 and D 6.

Rare details:

Dd 1. About 2 inches of blot above D 6.
Dd 2. Small bottle-like projection at center of blot.
Dds3. White within Dd 2. May extend upward to point where greys meet. This is the white area most often included in Ds2.
Dd 4. Half of D 2 or D 7.
Dd 5. Area extending laterally between D 3 and Dd 2.
Dds6. White bounded by D 3, Dd1 and Dd 5.
Dd 7. D 1 less D 5.

CARD X

Details:

D 1. Lower left brown area.
D 2. Center brown area.
D 3. Upper green. May include green over blue area.
D 4. Lower blue.
D 5. Brown on right side above blue but may include brown covered by blue.
D 6. Top blue and green together. May include blue over brown area.
D 7. D 4 plus brown at lower right corner.
D 8. Upper blue. May include blue over brown area.
D 9. Right side brown areas with blue and green areas between.
D 10. Brown to left of D 2. May also include blue over brown at top.

Rare details:

Dd 1. Lower green.
Dd 2 or Dds2. Area across center taking parts of D 2, D 5, D 10 and green at left and sometimes interior white areas.
Dd 3. Right side blue and green between browns.
Dd 4. Blue over brown area on right center.
Dd 5. Left side green above D 1.

CARD XI

Details:

D 1. Side blue and green areas as unit.
D 2. All brown areas together.
D 3. Dark central brown. Sometimes extending down to curved dark brown areas above D 6.

D 4. Top central brown sometimes extending down to about ½ inch below upper edge of red.
D 5. Top third of D 1.
D 6. Lower center rounded areas.
D 7. Central third of D 1. Sometimes includes D 1 less D 5.
D 8. Lower reds.

Rare details:

Dd 1. Line about 1/8 inch in width down center.
Dd 2. Yellow.
Dd 3. Dark area of brown over blue above and toward center line from Dd 2.
Dd 4. Blue at lower portion of D 1.
Dds5. Upper interior white.

CARD XII

Details:

D 1. Center yellow, brown and black "butterfly" area. May also include D 4 and D 10.
D 2. Upper outer corner blot of green, red and blue.
D 3. Lower green.
D 4. Top center black.
D 5. Side center red, green and blue.
D 6. Lower blue.
D 7. Light yellow. Lower center.
D 8. Top center blue.
D 9. All yellow, including yellow over brown.
D 10. Greenish yellow areas to sides of D 4.

Rare details:

Dd 1. Roundish, yellow brown area, about 1 inch in diametre, near center of blot. Sometimes includes small spot of green just above.
Dd 2. Brown areas together.
Dd 3. Grey black areas above Dd 1 together.
Dd 4. Yellow overlay on brown.
Dd 5. Small brown and green area below D 4.
Dd 6. Darker part of D 10.
Dd 7. Brownish yellow at center of blot, about ½ inch in diameter.

APPENDIX II

FORM OF CONTENT

Card I

W *plus*

Animals, two, with long noses. Bat. Battle axe. Bears (cubs reaching for branches of trees.) Bones (hip structure). Boots. ∨∧Butterfly. Clouds. Dancers (two). Dogs, two with something in mouth. Eagle, heraldic. ∨∧Explosion. Figures, two. Flora on ocean floor. Fossil. Flowers, two. ∨Girls, two, sitting down. Hip bones. Islands. Lake. Leaf (maple). Lungs. Mannequins. Map relief. Men (two). Moth. Pelvis. People, two. Rock. Shoes, pair. Shoulders of woman with head and long feathers on hat. Soldiers presenting arms. ∨Tree. Vases, two. Women (two). Winged creature. Witches, two. X-ray.

minus

Airplane. Anchors, (two). Bee. Beetle. Chinese roof of building. Crab. Crown. Fly. Kidneys. Liver. Lobster. Metal, molten being poured. Mollusc. Organ, internal, dissected. Skull of Bird. Spinal column, cross section. Tooth. ∨∧Torso.

D 1 *plus*

Antenna of butterfly. Carnival character. Dolls. Dumbbells. Faces. Fingers. Girls. Profile. Women faces.

minus

Bottles. Drip (any liquid). Ears of dog. Foot prints. Oar handles. Penis.

D 2 *plus*

Axe-head. Bear. Boot. Dog, upper part of. Dress. ∨Explosion, atomic. Gnome. Hammer. Map of British Isles. Mountains. ∨Mushroom. Shoe. Squirrel. Vase (distorted). Woman. Woman, head and bust only (fancy headdress) (profile into Ds3). Woman, head and bust, profile on outer edge.

minus

Calf. Cat. Fish. Intestine (lower). ∨Map of Africa. ∨Tree. Uterus.

Ds3 *plus*

∨Airplane. Amoeba. Arrow. Bottle, fancy. ∨Cross. Candle in holder. ∨Duck in flight. ∨Diver. Fish. Fossil. Fountain. Hole, in rock. Horses' faces. Lake. ∨Lamp. ∨Man. ∨Person with arms outstretched. Ray. Sting-ray. Top. Water, body of.

minus

∨Bell. Brain, primitive. Coccyx. Diamond. Harpoon. Map of Danzig harbour. Stomach, cow's. X-ray of skeleton.

D 4 *plus*

Axe-head. British Isles, map of. ∨Cloth draped over a rock. Explosion, atomic. Lady with large skirt. Lake. Map of England. ∨Map of North America. Woman.

minus

Amoeba. Foot print, animal. Fowl. Nerve cell.

D 5 plus

Clowns. Feathers, of hat. Girls. Grenadiers. Ladies, victorian. Lamp, street. Men. Stick, with face on it. Totem poles. Women.

minus

Caterpillar. Centipede. Fish. Intestines. Map of Italy. Tail of animal. Trunk of elephant.

Dds1 plus

Boot. Camel's head. Foot. Map of Italy. Sheep's head.

minus

Dog's head. Snake's head.

Dds2 plus

Arrowhead. ∨Baby, sitting down. Legs. ∨Man, sitting with legs apart.

minus

Bell. ∨Chinese building. Diamond, baseball. Hat. ∨Tent. ∨Tree.

Dd 3 plus

Dog. Logs of wood (fire wood). Mountains. Rats.

minus

Crab. Dolphin. Fish. Udder (of cow).

Dds4 plus

Bottle, fancy. Brain of dog fish. Embryo, chicken.

minus

Mouth of whale.

Dd 5 plus

Bear's head. Dog's head. Map of Spain and Portugal.

minus

Shark's head.

Dd 6 plus

Animal face. Bonnet of woman.

minus

Fist, with thumb sticking up.

Dd 7 plus

Fingers. Profiles (several).

minus

Teats, animal.

Dd 8 plus

Snake.

minus

Worm, squashed.

CARD II

W plus

Animal skin (stretched). Bat. Bear's face. Bird in flight. Bones of pelvis. Bowl, flat, ornate. ∨∧Butterfly. Cape, cloth or fur. ∨∧Cat's face. Chinese art. Clam. ∨∧Clouds. Diagram, medical. Dragon. Eagle, heraldic. ∨∧Face, halloween. Float, in a parade. Flower. Fox's face. Fungus, shelf. ∨∧Head, cat or fox like. ∨∧Head of a fantasy creature. >Human, back against something, reflected in water. ∨∧Insect, front view. Idol, winged. Landscape. Leaf, curled. ∨∧Lynx's face. Map, relief. ∨∧Mask. Monster, with wings ∨∧Moth. Mountain range. Owl's face. Person dressed as spook, arms out. People, two, reclining on a couch. Pelvis. Ray. Rock. Shawl. Skate. Sea shell.

W *minus*

Airplane. Bee. Bones of chest. Buttocks. Cabbage. Crab. Cross section of human or animal. Dancer, headless, male. Fish. Fly. Human body, cross section. Lungs. Man, flying. Octopus. Plant. Sea creature. Skull. Woman lying on back with legs spread.

D 1 *plus*

Antelope head, with horns. Bat. Bird. Crow. Bogey with arms outstretched. Cats, two. Clouds. Deer's head. Moose head, with horns. Mountain. Raven. Vampire. Vulture. Wings, insignia.

minus

Bed end. ∨Mosquito. Octopus. ∨Umbrella.

D 2 *plus*

Cocoon. Crocodile head. Face. Fiend. Fish, front view. Fox face. Head. Jelly fish. Mask. Owl.

minus

Crawfish. ∨Embryo. Intestine, lower.

D 3 *plus*

Animal skins. Bat. Clouds. Mask. Men, lying with feet together. Men, hands pushing together. Mountains. Shadow of bird or bat. Smoke. >Woman, standing, reflected.

minus

Birds, two, facing each other. Fish's face.

D 4 *plus*

Cactus. Candelabra. Fork. Lantern. Person with outstretched arms. Sea shell, opened. Skeleton.

minus

Automobile chassis. Genitalia, female. Intestine. ∨Wind pipe, human. X-ray of machinery.

Ds5 *plus*

Airplane. Face (comic), (weird). Goblin. Lamp, with shade. Tree (pine). Vase.

minus

Crocodiles, two. Throat, inside out.

D 6 *plus*

Animal head. Buffalo skull. Mask. Rabbit head. Skull of animal.

minus

Pelvis.

D 7 *plus*

Animal swimming. Man, headless. Skate. X-ray of human body.

minus

Fish. Leaf.

Dd 1 *plus*

Face. Head. Profile.

minus

People, or animals, on hill top.

Dds2 *plus*

Cat. Dog. Eye, of animal or mask. Lake. Map.

Dd 3 *plus*

Face. Lion's head. Piers. Skyline of city.

minus

Fingers. Teats, animal.

Dd 4 *plus*

Profile (old man).

Dd 4 minus

City skyline. ∨Vase.

Dd 5 minus

Bird. Octopus.

Dd 6 plus

Figure (huddled or wrapped).

Dd 7 plus

Cat. >Small animal standing up. >Rabbit.

Dd 8 minus

Tongue.

Card III

W plus

Anatomical drawing. Bookends. ∨∧Butterfly. Coat of arms. Cossacks, backs to fireplace. Dante's Inferno (painting of). Eskimos, around a camp fire. Face (masked) (horned). Fireplace. Ladies in antique costumes. ∨Lava (flowing). Men, two. (engaged in some activity). ∨∧Machine. Mask. Moth. Persons, two (sitting on bench or chair). Pelvis. Spirits rising from an inferno. Skull. Sugar bowl with handles. Television picture. Vase. ∨∧Volcano. Women, two, seated by fireside or at a table. Witches (over cauldron).

minus

>Bear's head. Car (front view). >Dog's head. ∨Drill press. Fox's face. ∨>Face of pig. Goat, head. Genital organs, male and female together. Insect. >Letter E. Lungs and stomach. Man, bent over backwards. >Pig's head (side view). Person bent over (rear view). Painting of human head. ∨Riding breeches. >Wolf's head.

D 1 plus

Bust. Eskimos. Figures, two. Genii. Human beings. Ladies, two. Men. Map of England. Monks. Marionnettes. Persons. People, two. Photograph, aerial. Rocks. Roosters, two. Soldiers, two. Twins. Woman.

minus

Birds. ∨Map of South America. ∨Pelvis.

D 2 plus

Ape. Face. ∨∧Head (Woman's) (Santa Claus) (Man's) (Pygmy's). Rooster Head.

minus

Bird's head. >Iceberg, in water, just off shore. Parrot's head. >Rhinoceros head.

D 3 plus

∨Animal Face. ∨Bison head. Beaver. ∨Bull's head. Cat's head. Eagle on rock. Face, side view. Muskrat. Owl on limb. Squirrel's head. Ship's figure head. Walrus head.

minus

Fish. Frog on stone.

D 4 plus

Blood, dripping. Butterfly. ∨Dome of mosque or church. ∨Helmet (German). ∨Mosques. ∨Persian castle. ∨Spires. ∨Turrets. ∨Temple, Indian.

minus

Human, lower half. Legs of chicken. Lungs.

D 5 plus

Butterfly. Cat's face. Creature. Crab. Face, staring. Mask. Monkey's face. Spinal cord, cross section. Sun shining through clouds.

minus

Automobile transmission. Bird. Human, cross section. Lips. Lungs. Limbs, lower, cut off. Slice of Beefsteak. Turkey.

D 6 plus

Andirons. Bed. Couch. Creature winged. Crab. Day set. Fireplace. Map, topographical. Person, upper half, arms around others. Settee. Stand to hold a bowl.

minus

Bird in flight. Skull, part of.

D 7 plus

Andirons. Building. Fireplace, part of. Figure, carved. Lamp. Mace. Mosquito head. Sceptre.

minus

Lion, front view. Penis.

D 8 plus

∨Bird's head. ∨Building (Egyptian, eastern). Club. Young bird. Chalice. ∨Fox head. Head of insect. Mace. Skeleton, part of. Urn.

minus

Human body, cross section. Head, back of.

D 9 plus

Butterfly. Fireplace. Lamp (hanging). ∨Mosque with minarets.

minus

Inside of slaughtered cow. Turkey.

Dd 1 plus

Andiron. Bird. Cat. Chair. Dog. Furniture. Lounge.

minus

∨Devil, leaning back kicking. Goat. Lamb. ∨Man with one leg and arm up. >Ostrich.

Dd 2 plus

Andiron. Dog, rear portion. Fireplace, part of.

minus

Crab. Woman's head.

Dd 3 plus

Cap. Hat.

minus

∨Vagina.

Dd 4 plus

Profile of person's jaw. Head of small animal.

Dd 5 plus

Bear cub, back of.

minus

Squirrel.

Dd 6 plus

∨∧Face.

minus

Prehistoric animal.

CARD IV

W plus

Animals, two, small, dressed up. Anatomy, medical diagram. Altar. Butterfly. Birds in a nest. Bomb explosion. Coat of arms. Court scene. Chickens, modernistic painting of. Dancers, two. Devil. Face, ghost, modernistic painting of. Flowers in a vase. Head of viking. Insect. Insignia (German army). Jewelry (ornamental). Men, two, playing some instrument. Mask. Plant. Skull. Skeleton of animal. ∨Vase, chinese. X-ray.

minus

Cat's face. ∨Eiffel Tower. ∨∧Lobster. ∨Locomotive, (front view). Ornament on a stand. Pelvis. Rear end of squashed animal. Tiger head.

D 1 plus

Brain of bird, section through. Butterfly. Cameo. Figures robed. ∨∧Lungs. ∨Eskimos, two. Moth. ∨∧Mask. Owl's face. ∨∧Pelvis. ∨Rocks. Rabbits, two or three on each side, (trees and/or shrubbery fills in background). Tail of invertebrate animal (isopod). >Trees reflected in water. Vertebra.

minus

∨Boots, pair of. Flesh. ∨Rabbits, two. ∨Skull of person (smashed). Vehicle, three wheel.

D 2 plus

Animals (cartoon type). Blouse. Birds, two. Chickens, two (coming out of shells) (two headed). Cockatoos. Embryo, animal. Head of persons. People, two. Puppets. Pandas. Rocks. Teddy bears. Toy, animated.

minus

Beavers (heads to lower centre of red.) Butterfly. Cradle. Dogs, two. Foetuses, two. Shoulder pads. Sheep. Telephone, upside down.

D 3 plus

Aerial view of landscape Badgers, two (heads to center). Bears, two (heads to center). Butterfly. Coral formation. Coal, piece of. Medical drawing. Men, two, courtiers, priests, etc. (heads in block over red facing center). Porcupines, two (heads to center). Rocks. Skunks, two (heads to center). Sponges. >Trees reflected in water. Wings, of bird.

minus

Brain, human. Bug. Dog's head. Genitalia, female. Insect. Lungs.

D 4 plus

Animal head. Bird's head. Bear's head. Chicken's head. Embryo head. Face. Head, human (old man) (bald). Panda's head. Profile. Soldier, Japanese.

minus

Camel's head. Sheep's head.

D 5 plus

∨Chandelier. Cat. Duck. Fossil. Hawk. Indian. Jar. Larva. Liver fluke. Man. Owl. Satan. Simpleton. Squirrel, flying. Urn. Vase. Woman. Window, stained glass. X-ray.

minus

Brain. ∨Bat. Genitalia, female. Insect. Nervous sys-

tem, central. Skeleton, human. Spine (medical illustration). Womb with vaginal tract.

D 6 plus

Comedian's head. Candles. Clown's head. Chipmunks. Dwarfs. Eyes (in a mask). Faces. Figures. Girls. Heads. Magii. Men, kneeling, squatting. Mice. Negroes. Punch and Judy. Squirrels. Women, kneeling.

minus

Fish. Frogs. Hands.

Ds 7 plus

Bear skin head. Crest, air force. Face (disapproving). Fish (front view). ∨God, oriental. Insignia (air force). ∨∧Ku Klux Klan head. Ox skull. Steer's head. Skull of horned animal. Sheep's head.

minus

Fish, front view. Penguin, dead. ∨∧Space ship.

D 8 plus

>Atomic bomb explosion. Animal. >Bison head. >Bull's head. ∨Forest on a hill. >Oil gusher. >Shrub. Stone (in water). Sponge.

minus

Fowl, decapitated. >Human head. Sheep, rear view.

D 9 plus

Genitalia of male. Insect tail. Mitre. Penis. Phallic symbol. ∨Totem pole.

minus

>Turtle head and neck. Water spouted by whale.

D 10 plus

>Bear cub. Creatures. Chickens, squatted. Dancers, Russian. Flower. Halloween costume. Peacock dance.

minus

Lambs.

Ds11 plus

Face. ∨Mask.

minus

∨Woman's head (D 1 as hair).

D 12 plus

Butterfly. Mask.

minus

Fish, front view.

Dd 1 plus

Elephant head. Human head, grotesque face of clown with large nose. Rabbits (with landscape detail).

minus

Dog's heads, two. Map of Spain. ∨Rabbit. >Sheep. Walrus skin.

Dd 2 plus

Birds. Beavers. Eyebrows. Eyes. Penguins.

minus

Grapes, bunches of.

Dd 3 plus

Coral, piece of. ∨Mountains. ∨Rocky hill side.

Dd 4 plus

∨∧Animal, small (head toward D5). Moose head.

minus

Bat. Heart.

Dd 5 plus

Rabbit.

CARD V

W plus

Apron, woman's. Acrobats, group of. Butterfly. Chair, decorated. Coat of arms. Costume, woman's, old fashioned. Coral. Dance, around Maypole. Decorations, Christmas. Design. Embroidery. Fan. Flowers. Floral display (bouquet). Garden (stylized). Girl, with big bow and large, apron. Girls, two, sitting back to back. ∨∧Gymnastic act (pyramid). Jugglers with objects. ∨Man, with arms outspread. Man holding up a tree. ∨∧Mask. Men, two, sitting back to back. Moth. Orchid. Painting (modern art). Pansy. Plant. ∨∧Pyramid, human. Spring, painting of. Shrub (decorative). Tree (Christmas).

minus

∨∧Animal face or head. ∨∧Explosion. Spine, part of. Tent. Turbine.

D 1 plus

Arabs, profiles outward, two. Butterfly. Bow. Children, two. Faces. Feathers. Flower. Hat (woman's). Heads, two, women. Iris. Men, two, faces together. Morning glory. Moth. Orchid. Ostrich plumes. ∨People, two, sitting back to back. Petunia. Seeds, winged. Wings of butterfly or moth. Women, hooded.

minus

Fox head. Gargoyle. Kidneys. Muskrat. Portuguese Man-of-war.

D 2 plus

>Bear. Body, of man. Bears, two. Bed-jacket. Bloomers (clothing). Buddha. Butterfly. Cape. ∨Chickens. Child. Figure. Flower. ∨Gladiola. Gnome. Gorilla. Idol. Jacket. Lampstand, base. Legs of man. Man. Men, two. Orchid. ∨People, two, sitting back to back. Petals of flower. Plumes, of hat. Roosters, two. ∨Santa Claus. Snow suit (baby's). ∨Snap dragon. Trousers (two pairs). Vase. ∨Women, two.

minus

Cows, two, heads turned. Crab. Eagles, two. Lobster.

D 3 plus

Bears, two or three. Butterfly. Cat, standing on hind legs. Child. Doll. Figure. Girl, leaned over. Gorilla. Iris. Jacket. Man. Man and woman dancing. Orchid. Person riding two animals. Under clothing. Witch doctor with long headdress.

minus

Ostrich, pigeon-toed.

D 4 plus

Animal, prehistoric. Bird. Cockatoo. Eagle. Fledgling. Gnome. Hawk. Lady, old. Lizard, upright. Man, hunch backed. Parrot. Rooster. Sea-horse. Statue. Squirrel.

minus

Dog. Fish. Map of England. Mermaid. Poodle. Rose petal. ∨Woman.

D 5 plus

Animal head, rear view. Birds, two. Boy, one or two. Cocks fighting on a mound or other object. ∨Faces, two. Figures, two. ∨Fishermen, two. Ladies, two. Men, smoking. Monster. Pansy. Peacocks, two. Priests. ∨Scarecrow.

minus

Brain, of cat or rabbit. Cat. Crocodile head. ∨Monkey's head. Pot. Worm, longitudinal section.

Ds 6 plus

>Dog's head. Map of England. ∨Sea-horse.

minus

>Gargoyle. ∨Serpent's head. Woman.

D 7 plus

Bean (lima). Finger print. Fungi blotches. Hedge. ∨∧Kidney. Potato. Putting green (golf). Thumb print.

minus

Foot. Heart.

D 8 plus

Boot. Foot. Leg. ∨Man with hat, long nose (head only). Shoe.

minus

Eagle head. Lobster claw.

D 9 plus

Candle. Feather. Flame of candle. ∨Plumb-bob.

minus

Beetle. Genitalia (female). Maggot. Penis.

D 10 plus

Animal head. >Design, carved object. Dog's head. Hedge, bent over. ∨Seal.

minus

∨Bird's head. >Horse's head. Whale.

D 11 plus

Bear's head and forequarters. Man, dancing. Rooster. ∨Woman, upper part of body and head.

minus

Eagle. Horse (toy).

D 12 plus

>Animals (mythical, prehistoric). ∨Butterfly. Dress.

minus

∨Elephant trunks. Face, part of.

Dd 1 plus

Idol. Jar. ∨Teddy-bear face, part of, with some surrounding white space. ∨Violin, bass.

minus

Mouse. Penis. Scorpion.

Dd 2 plus

∨Mask. Dog's head. Map of Spain. Monster.

minus

Gorilla head. Head of man. Sheep (front part).

Dd 3 plus

Ear.

minus

Worm.

Dd 4 plus

Bear's head. Dog's head.

Dd 5 plus

Face. Flower.

Dd 6 plus

Birds.

minus

> Mouse. Scorpion.

CARD VI

W plus

Animal skin. Animals, three, standing up. Ape. ∨∧Bears, two or three. Bear, rear view. Bear skin. Binoculars. Boy with hands to ears, heavily clothed. Butterfly. Coats, two, fur. Clothes, hung up. Clouds. Coal, lump of. Coral, piece of. ∨Corsets. Design. Dog, front view. Elephant, rear view. Fossil. Fungus (shelf). Fur coats, two. ∨∧Fur piece. Head of cat. Human, crouching. Knot on a tree. Man, fat, touching floor with hands. Man, headless, between pillars or other objects. Man, holding up two large dolls. Mask. Men, two. Mineral, piece of. Monkey. Moth. Monster, prehistoric. Mosaic design. ∨∧Mountains. Painting, pattern or design. Pants, woman's, lace. People, three, huddled together. ∨People, two, looking over wall or through hole in rocks. ∨People, four. Photograph, aerial. Rocks. Rugs. three, rolled together. Shawl (jacket). Sponge. Stove. Stump of tree. Trousers. Urn. Vertebra. Woman, fat, bent over. Wood (sticks, drift).

minus

Body, headless and legless. Cow, rear view. Dog, side view, no head. Elephant foot print. Hippopotamus, pushing through plants. Helmet, soldier's. Leg, human, part of. Letter H. Organ, interior, human. ∨∧Pot, cooking. Rhinoceros face. Roll of dollar bills. Sea growth, deep. ∨Statue of man with hands raised. Turkey, rear view. Turtle. Vegetation, marine.

D 1 plus

∨Bears, two. Breeches, riding. Elephant's fore legs. ∨Indians, two. Legs, of man. Man, lower part. ∨Owls. Pants. ∨People, two. Underwear.

minus

∨Birds. Dogs, two. Dog's ears. Legs of mutton. Womb (includes white area between).

D 2 plus

Bear, cub, standing on hind legs. ∨Child, in great coat. Crags. ∨Dancer. ∨∧Doll. Drummer boy. ∨∧Figure. Fossils. ∨∧Lady, in fur coat. Panda. >Rocks. Rug, rolled. Stump of tree. Torso. ∨∧Woman.

minus

Cat. Dog. Door. Gate. ∨Rabbit. ∨Toad.

D 3 plus

Animals. Arms, two. Cats, crouching or lying. Goats. Idols. Lambs. Lions. Man's neck and shoulders. Mountain lions. Sheep, facing each other. Tigers, lying down.

minus

Apes. Fox heads, two. Girls, two, headless. Snails.

D 4 plus

Bear, body of. Child. Child's play suit. Costume. Elephant. Figure, human. Headless man. Moth. Person. Suit, flying. Torso. Tree Trunk. ∨Women, two, facing each other.

D 4 minus

Cat. Doors, swinging. Gate. Lamb.

D 5 plus

Animal face. Butterfly. Chest, man's. Forest on hills. Reptile head. Satanic creature. Torso.

minus

Drill, end of (for boring metal). Face of frog.

D 6 plus

Cliff. Foot of elephant. Hoof of horse. Paw of dog. Rocks. Smoke billowing. Woman's head with bonnet or hat.

minus

Dentures. Head of bird.

Ds 7 plus

∨ Decanter. Fish, part of. Hour glass. Vase.

minus

Uterus.

D 8 plus

Bear's head or face. Coral, piece of. Faces. Flower (pansy). Men's heads.

minus

Bull's head. Tiger.

Dd 1 plus

Animal face. Chinese face. Face, female. Head of human. Mummy head. Old man of mountain. Sphynx.

minus

Tooth.

Dd 2 plus

∨ Dog's head. ∨ Head, with high collar or other clothing behind it.

minus

Hoof of cow.

Dd 3 plus

Paramecium. Tail of elephant.

minus

Anus. Vagina.

Dd 4 plus

River. Road. Watercourse.

minus

Mark made by a snail crawling along. Snake.

Dd 5 plus

Faces, two, profiles.

Dd 6 plus

Animal face. Face of owl.

Card VII

W plus

Animals, two, small, mythical, horned, sitting back to back, facing each other. Animal, front view. Bears, two, sitting up. Collection of men's faces (scored both plus and minus). Clouds. Coat of arms. Coral reef. ∨ ∧ Design. Dogs, two sitting up. Elves. Embroidery. ∨ Explosion. Figurines, group of. ∨ ∧ Flowers. Forest, aerial view. Goats, two. Islands. Lakes. Leaves, fallen (scored both plus and minus). Map of Orkneys. Microscopic slide. Painting, chinese. People, two, sitting back to back, smoking. Photograph, aerial. Plants, group of (scored both plus and minus). Rocks, above snow or out of water. Sea-shells (scored both plus and minus). Tree, split in two. Trees, two. Unicorns, two.

minus

Anatomy, less back bone. Collection of men's faces (scored both plus and minus). Explosion. Foot prints on snow, human or animal. Flower, one, painting of. Horses, two, sitting back to back. Leaves, fallen (scored both plus and minus). Moths, collection of. Plant. Plants, group of (scored both plus and minus). Sea-shells (scored both plus and minus). Shrubs. Vegetation, dried out, collection of. Witch.

D 1 plus

Ant-eater. Animal head. Animal. Antelope head. Ballet dancer. Bear's head. Bull's head. Cannibalistic headdress. Cloud. Clown's head. Coral formation. Dancers. Dog head. Donkey head or face. Fox head. Face (grotesque, hairy, etc.). Girls. Gun, anti-aircraft. > ∧ Goat head. Horse head. Kangaroo. Leaf, fallen. ∨ Man's head. Ornamental figure. Pig's head. Puppet. > ∨ Rhinoceros head. Silhouette of Woman. Sorceress, sitting in chair. Tree. Unicorn's head. Ubangi head. Woman. Wolf head. Women (two in each of D 1). Woman in chair holding broom. Witch.

minus

Bagpipes. Birds. Crab. Crawfish. ∨ Crane (machine). Frog. Lion head. Map of British Isles. ∨ ∧ Monkey's head. > ∧ Person sitting on an animal's back. Sea-horse. Sword-fish, head above water. > Table, broken.

D 2 plus

Bear cub. Clam. Cloud. Crab. Cyrano de Bergerac head. > Cabbage, head of. > ∧ Face. > Fan. > Flower. > ∧ Head of man, old. Leaf. Map of Ireland. Mask. Petal of flower. > Profile. > Rose. Smoke ring. Sea-shell. Tortoise. > Tree. Turtle. > ∧ Woman, old, caricatured.

minus

Bean. > Bottle. > Bouquet of flowers. Dog. Hand, pointing. Map of Ireland. Porpoise. Poodle. Pig. Thumb.

D 3 plus

> Boy carrying load. ∨ ∧ Cloud. Dog. Dragon in cloud (chinese). Duck. Griffon. Goose. Indian in sleeping bag. Limb of tree (piece). Map. > Map of Japan. Person, holding something in front of him. People, three. Poodle. Reptile, sea. Rock formation. Sea-horse. Serpent. Snake. Smoke cloud. Swan. > Woman in great-coat carrying something.

minus

Drawing (caricatured) of head and hand. > Head, man's part of profile along lower edge). Horse and rider. Lamb. Leaf. Map of British Isles. Moth, emerging from cocoon.

D 4 plus

Bird. Canary. Child. Cloud. ∨ > Cub lion. ∨ ∧ Finger, pointing. ∨ ∧ Fist. ∨ ∧ Hand, pointing. Kitten. Lion. Pistol. Revolver.

minus

Face. Forehead of man. Leaf. Rabbit. Spruce gum, lump of.

D 5 plus

Cloud. Face. Girl's head. Gorilla head. Head (human). Map of Africa. Paw mark. Profile. Silhouette. Woman's head or face.

minus

Leaf. Moccasin.

D 6 plus

Animal, small, short legged. Cat. Can opener. Cloud. Fingers pointing down. Hand, pointing. Marten. Mink. Squirrel. Wrench. Weasel. ∨Woman, holding something up.

minus

Cloven hoof. Dog. Donkey. Face of old woman. Leaf. Lobster. Paw mark. Penis. Rocket. Sperm on a microscopic slide. Snake. Squirrel's tail.

D 7 plus

Bust of Indian, with headdress. Cloud. Dog's head. Duck's head. Goose head. Swan's head. Sea-horse.

minus

Cow's head. Head of horse. >Lion's head. Pliers.

Dd 1 plus

Bird's head. Duck's head. Goose head. Indian head, with headdress. Man's head, with beard. ∨Woman, old, sometimes kneeling.

minus

Arrow head. Hand, writing. Leaf.

Dd 2 plus

Arms. Hat, decorations on. Stalactites. Stalagmites.

minus

∨Fingers.

Dd 3 plus

Human profile. >Person, head of (sometimes smoking a pipe). Sphynx.

Dd 4 plus

Part of a man's headdress.

minus

Animal's horn. ∨∧Finger.

CARD VIII

W plus

Apes, two, holding something up. Animal, prehistoric, lying down, legs apart. ∨∧Bat. ∨∧Carvings, ancient, foreign, primitive etc. Cat's face. Clowns, two. Creatures, two. Couple, old, dancing. Figures, two, holding something. Football players. Humans, two. Heads, two. Landscape with sand beach on side. >Man, on hands and knees, reflected in water. ∨∧Mask. Men, two (in some joint activity). Monument. ∨∧Mountains, canyon or valley between. ∨∧Ornament, jet. ∨∧People, two. Skin of animal. Statue, with two carved figures. Table with objects on it. Twins, siamese. ∨∧Vase. Waiters, two carrying trays. ∨Women, two, old, running. ∨∧Wrestlers, two.

minus

Animal, cut open or dissected. Bag. Bug. ∨Dogs, two. Face, human. Fragments of a sand mold. Head of insect. Heart, opened for laboratory study. Insect. Owl. Snail, climbing up other side of a pane of glass. Skull of animal. Torso. Water beetle.

D 1 plus

Animal, with big ears. Bat. Bandstand (shell). Baskets. Bird. ∨∧Bivalve. Butterfly. Cat, rear view. ∨∧Clamshell. Coral shells. Creature, underwater. Design, shell. Ears of an animal. Fish, flat. Fly. Frog's face. Glacier, on mountain. ∨∧Mollusc. Mushroom, underside of. Moth. Plates. Ray. ∨∧Shell, oyster. Snails, two. Toadstool. ∨Tree grove. Tunnel entrances. Turbines, two, inside of. Turtle shell, underside of. Wings, of bat, butterfly or moth.

minus

Beetle. Eyes of an insect. Flower. Frog's eyes. Insect. Mouse, front view. Sheep. Sun dial.

D 2 plus

Head, of man, woman, football player, etc. Profile. Skull.

minus

Bird's head. Snail. Squirrel.

D 3 plus

∨Animal face with large ears. ∨Birds in a nest. ∨∧Claws. Crab. Dogs, facing each other. Feet of animal. ∨∧Hands, of child. Paws of bear.

minus

∨Antlers of moose. ∨Chickens. Feet of human. Lobster claws. Profiles, human.

D 4 plus

∨Animal head. Arms (and shoulders) of human. Bat. Cat's face. Dog's heads, two. Faces, two. Mask. >Men's heads, two. Rocks.

minus

∨Anteaters, two. ∨Dogs, two.

D 5 plus

∨Ape. Figure. Man. >Mountains.

minus

>Dinosaur. ∨Stone axe.

D 6 plus

Animals with long snout, (snout toward Dd 4). Ape's head, one on each side facing out. ∨Bear. ∨Birds, two, (beaks into Ds8). ∨Cat, back and side of head (facing out). Coal, piece of. Head, human, one on each side facing out. Skull, of ape.

minus

Lungs. ∨Peacocks (head at Dd 3). ∨Sheep. ∨Torso (lower half of blot).

Ds 7 plus

∨∧Airplane. Bell. Lake. Rotor of a washing machine. ∨Skull of horned animal. Wings.

minus

Citadel or fortress on a rock. Suction cup.

Ds 8 plus

Bell, christmas, paper. Candle. Cave. Fluke. Lake. Lamp. Torch. Torso. Tunnel opening. Vase.

minus

Arrow head. Mouth, inside of. Skeleton. ∨Skull.

Ds 9 plus

Candelabra. Figure. Lamp with shade. Man, with large hat. Person holding umbrella.

minus

Skin of animal.

D 10 plus
Butterfly. Totem pole figures.
minus
Crab. ∨Racing car.

Dds1 plus
Cat, rear view. Jar. Owl. Vase.
minus
Cow.

Dd 2 plus
Bird, long tailed. Eyes. Horns.
minus
∨Man, swimming on back.

Dd 3 plus
Cross. Canal locks. Candle.
minus
Horse. Whistle.

Dd 4 plus
∨Back of head, man's or ape's. Man's foot. >Sheep's head.
minus
Haystack. Turret.

Dd 5 plus
∨Head of bird. Small animals.
minus
∨Profile of man.

Card IX

W plus
Abstract drawing. ∨∧Butterfly. Chart. Clouds. Drawing by child. ∨Drawing of Japanese tree. Design. ∨∧Face, grotesque. Girl, young, on hill. Girl, one (abstract drawing of). Girls, two, dancing. Islands. Jig-saw puzzle. Landscape, viewed from a hill. Lakes. Map. Marine animals. Map, aerial survey. ∨∧Mask. ∨∧Moth. Mountain with snow. River Delta. Skeleton of crab. Tree. Women, two, dancing. Woman with four figures around her. Water shed.
minus
Ace of spades. Crab. Dog's head. ∨Heads, two, with hats on, facing each other. Spattering of blood or oil.

D 1 plus
Angels. Boy with top hat. Cloud. Couple (man and woman). Dicken's characters (two). ∨Dog's head. Fairy Godmother. Island. Lady, young in riding costume. Map of Ireland. Map of Greenland. Map of Newfoundland. Man in top hat. Person hurrying. ∨Tree. Woman. Witch.
minus
∨Boar's head. ∨Ear. Face. Head of person. Kidneys. Leaves. Lungs. Map of Australia. Map of British Isles. Musical Instrument. Roosters fighting. Shoulder blades.

D 2 or
Ds 2 plus
Airplane. Angel. Coat of arms. Dancer. Girl. Historical figure. Insect, flying. ∨∧Islands. Lady. Man lying on his back, arms and legs spread. Man standing with legs

apart. Mountain. Person, doing gymnastics. Priest, arms spread out. ∨∧River delta. Skeleton. Witch. Woman, arms outstretched. Woman, seated.

minus

Chinese character (writing). Map of Iceland. Piece of clamping machinery. Pelvis.

D 3 plus

Cloud. Child. Doll. Girl. Islands. Lady, playing tennis, looking in mirror, etc. Man's head, old, with beard, (profile into Dds3). Person climbing. Shadow of dancer. Woman, old fashioned, holding something in arms.

D 3 minus

Boot. Eyes of dog. >Head, human (nose at end of Dd 5). Map of Canada. Map of England. Map of Newfoundland. Ribs. Tree trunk.

D 4 plus

Crab claws. Eels. Embryos. Elephants trunks. Fishes. Pollywogs. Seals. ∨∧Sea-horses. Tadpoles. Worm, by Walt Disney. Woman's hair.

minus

Bowling pins. Bag pipes. Bottles. Galoshes, pair of. ∨Heads. Men, two. Penguins. Pipes, smoking.

D 5 plus

Dickens character. Hat. Head and shoulders of person. Huckleberry Finn. Man in top hat. Woman's head.

minus

∨Arrows. Bird's head. >Buffalo. >Pistol.

D 6 plus

Intestines. Microbes on microscopic slides. River tributaries. Sausages. Worms.

minus

>∧Figures reclining. Hand, human, painting of. Maze. Socks, pair of. Tail and rear portion of a fox.

D 7 or
Ds 7 plus

Butterfly. Dance of the spirits. Dancers, two. Map of islands. Person, with outstretched arms. Pyramid, gymnastics. Skeleton, of animal, bird or person. Woman.

minus

Frog's face. >Machine punch. ∨Skull of animal. Symbols (chinese characters).

Dd 1 plus

Ballerina. >Dog. Man, dancing, skating, etc. Map of Italy. Witch. Woman, old.

minus

Golf clubs. ∨Lichen (plant).

Dd 2 plus

Bowling pins. >∧Bottles. Ten pins.

minus

Breasts.

Dds3 plus

Arch (monumental). Girl. ∨Skull of horse or cow, part of. ∨Vase. Woman.

minus

Dog. Rear view of animal.

Dd 4 plus

Figures. Man and little girl playing. >Woman, climbing over rocks, crossing a brook, etc.

minus

∨Catapult, old fashioned, for bombarding fortress.

Dd 5 plus

>Man's head, with long nose. >Shadow of rugby player. >Tree trunk.

minus

Seal. Shark, hammer headed. Whale's head.

Dds6 plus

∨Bird. Lake. Map.

minus

Skull of animal.

Dd 7 plus

Dickens character. >Man's head, with hood or parka. Woman.

minus

>Hand, mittened, thumb up.

CARD X

W plus

Artist's palette. Artist's work (abstract). Balls of wool. Birds (scored both plus and minus). Blobs of paint. Blossoming shrubs. Candy, piece of. Child's art. >Children, four. Clouds. Flower. Football scrimmage. Garden, rock. Landscape (seen from a hill or airplane). Map, colored, topographical. Microscopic slide. Painting, child's, modernistic abstract. >∧Panda. Rock, with coloured minerals. Smoke. Sponge. Sponges, group of. Stones, pile of. <∧Teddy bear (one or group of). Trees, group of (scored both plus and minus). Window of coloured glass. ∨Woman, stout, holding something.

minus

Animal. Birds, group of. (scored both plus and minus). Butterfly. ∨Exploding atomic bomb. <Human face, front view. Mushrooms, patch of. Shrub. Torch. Tree. Trees, group of (scored both plus and minus).

D 1 plus

Apple. Baby's face or head. ∨Head. Heart. >Lampshade. Man's head. Map of Australia. Potato. Pear. Palette. ∨Statue. Strawberry.

minus

>Axe (stone age). Bladder. Map of Spain. >Parasol. Wig.

D 2 plus

Boy's head. Child's head. Clown's head. Face, grotesque. Figure. ∨∧Head. ∨Man's head. <Mask. >Mushroom. Owl. Person, young. >Puffball. Profile. Potato. Stones. Tree.

minus

Fox. ∨Mouse. <Stomach.

D 3 plus

Bust of man. Child. Cupid. Elephant. Head (one or two). ∨Kola bear. Man. >Rhinoceros head.

minus

Cat. ∨Pig's head.

D 4 plus

Bird. Man's head (Popeye). Mask. ∨Turtle, front part.

minus

Camel's head. ∨Seal.

D 5 plus

Face. ∨Head. Person's head, bald. ∨Woman's head, with hair.

minus

Egg in egg cup. <Foetus. Young bird.

D 6 plus

>Ape. Bear. Dog. >Dutch boy, walking, hands behind back. Figures in Fantasia. >Girl, small. Piggy bank (head in blue over brown). ∨Teddy bear head.

minus

Airplane. Animal head. Kittens, two, playing.

D 7 plus

>Child, sometimes in act of throwing an object. >Girl, kneeling, with doll or parcel of some sort. Men. Woman, with baby on back. <Workman in overalls.

minus

∨Bear. ∨Cat. Dragon.

D 8 plus

>∧Ape. Cow's head. Child. Eskimo. <Face with big nose. Man bundled in robes, etc.

minus

∨Elephant. Ray.

D 9 plus

Cherub. Child. Lady, old. Person. Stones. Woman, sitting down.

minus

Bird in a nest. ∨Lamb suckling.

D 10 plus

Boy. Child. Girl, sitting. Man. Person. Skater. Santa Claus. Teddy bear. Woman.

minus

>Buffalo. >Dog.

Dd 1 plus

∨Atomic bomb explosion. ∨Flower growing from rock. ∨Head of African. ∨Tree.

minus

∨Head of pup.

Dd 2 or Dds 2 plus

>Woman, with hat or sunbonnet.

minus

∧>Skeleton of prehistoric fish.

Dd 3 plus

>Bear, toy. Tree against sky.

minus

Fish. <Man (head or bust) with hat on.

Dd 4 plus

∨∧Marshy lake.

minus

Man's head (hairy). >Tree.

Dd 5 plus

∨∧Fish.

minus

>Pig's head. Man, fat.

Card XI

W plus

Animal. Artistic effort. Biological specimen, dissected. Bloom, exotic. ∨Bouquet of flowers. Butterfly. Coat of arms. Design. Fan. Flower (exotic). Garden, flower. Hat, colorful. Humans, two, with ceremonial (or religious) accessories. Insect. >Landscape, reflected. Mask. Moth. Natives kneeling before an idol. Ornament, carved. Painter's palette. Person, abstract painting of. Skin of animal. Spectra. Stage, lighted. >Sun fish. Turtle, (sometimes DW, still plus). Witches making their brew.

minus

>Ape, with indian headdress. ∨Arms, two, holding feathers. Clouds. Ducks, flying. ∨Explosion. Face of animal. ∨∧Fish, flat. Islands, two, with speed boat going between them. ∨Man, heavily built, blowing a large horn. Map. Parrot. ∨Volcano.

D 1 plus

Angel. Animal. Bear Cub. Chess piece. Child. Chorus girl. Creature. Dwarf. Elf. Fairy. Figure. Flowers. Girl. Gnome. Indian. Maid. Man. Monkey. Panda. Person. Religious figure. Squirrel. Witch doctor. Woman.

minus

>Elephant, spraying water. ∨Face. Insect, winged. ∨Profile. Mouse, dressed up.

D 2 plus

Animal. Animal skin. Animals, two, back to back. Ballet dancer. Bear skin. Bell. Bowl. ∨Butterfly. Christmas bell. Church dome. Dancer. Flower. Idol. Lamp. Lantern, Japanese. Moth. ∨Ostrich plumes. Pagoda. Paper bell. Pine cone. Soil eroded. Turtle. X-ray.

minus

Acorn. Airplane. Body, cut open. Dissection specimen. Insect. Livers, two. ∨Ribs.

D 3 plus

Alligator. Animal, swimming, top view; opened up for dissection. Bear skin. Bell. Buoy. Crawling creature. Coat hanger. Couple, dancing. Crocodile. Girl. Girls, two. Goddess. Knight. Lamp, floor. Lantern. Man in armour. Ornamental light. Pelt of animal. Person in costume. Priest, oriental. Religious figure. Salamander. Shade of a lamp. Skin of animal. Spine, x-ray. Street lamp. Trilobite. Women, two.

minus

Bat, hanging by legs. Bird. Beetle. Cigar butts. Insect. Monkeys, two. Spindle (machine).

D 4 plus

Animal head. Bird head. Bell. Church staff. Cross. Governor on steam engine. Head of fox or wolf. Head of turkey. Lamp. Light, street or ornamental. Radio tube. Snake head. Turtle head. Urn.

minus

Bullet. Crown. Genitalia, male. Penis of animal. Projectile.

D 5 plus

Baboon's head. Chimpanzee, head. Face. Goblin head. Grotesque creature. Head of human, indian, monkey, pigmy.

minus

Ear. <Leaf. Mouse's head. Snake's head.

D 6 plus

Animal heads. Breasts. Chestnuts, two. Face, laughing, full-lipped. >Fish head. Genitalia, female. Helmets. Monkey face. Skunk heads. Shells. Snails.

minus

Animal, rear view. ∨Bud, on plant or tree. Ducks, two, rear view. Kittens. Seal heads. Sea lions. Tail, split. Testicles. Walnut, partly opened.

D 7 plus

>Fish, tropical. Indian head. Man's head. Peacock. >Shrub. >Tree. Woman's head.

minus

Beaver head. Leaf.

D 8 plus

Flowers. Head. Porcupine head. Parakeet.

minus

Organ, internal. Turkey.

Dd 1 plus

Lamp post. Path. Road. Spear. Spine, of animal. Worm.

minus

Artesian well. Intestine.

Dd 2 plus

Grapefruit. Sun shining through trees.

minus

Human head.

Dd 3 plus

Bear. Cat.

minus

∨Boxing gloves. Fowl. ∨Sheaf of wheat.

Dd 4 plus

Flower petal. Partridge. Pheasant.

Dds5 minus

∨Map of England. ∨Polar bear, standing on hind legs.

CARD XII

W plus

Art, modernistic. Brooch. Butterfly. Coat of arms. Dance, childrens. Design. Flowers. Fruit, bowl of. Forest, aerial view. Garden. Hat, woman's. ∨Mask, ceremonial. ∨Menagerie. Moth, tropical. Ornament. Poppy field. Painter's pallette. Painting, modernistic. >Scenery, colorful, reflected. Underwater scene. Walt Disney creation. Water babies' playground.

minus

Anatomical diagram. Boat, in a cove. Crab. >Clothes, feminine, laid out on a bed. Dutch flower girls, two. ∨Idol. Insect. Map, relief. Lobster. Meteor type missile, clearing large area of land. ∨Monster, tropical.

D 1 plus

Butterfly. ∨Iris. Lady, sitting down (includes D4 and D10). ∨∧Mask. Moth. ∨∧Orchid. Pickaninny. Tibetan monk, with cape.

minus

Rabbit, front view. ∨Sun coming up and shining into a valley.

D 2 plus

Apples with leaf. Cow's head. Dancer, primitive. Eskimo child. Flower. Face. >Fish, prehistoric, tropical. Head of person. Indian headdress. Lady's head and back. ∨Man, carrying pack. ∨Portuguese man-of-war. Person. Stones, precious, cut. Woman, with shawl, throwing something from a container.

minus

∨∧Bull's head. Crab. >Governor of engine. Insect. Parrot.

D 3 plus

>∧Cabbage. >Chinese figures, carved. ∨∧Fish. >Flower. >Figures, human, carved. Insect. >Man. >∨∧Ornament. >Person. >Statuette. Stone, semi-precious. >Vase.

minus

Bird. Liquid, spilled. Lizard. Mouse head. Turtle.

D 4 plus

Alley pins, two. Back of head. Bald head. Cat's head. ∨Donkey, rear view. Duck, back of. ∨Fox head. ∨Horse, rear view. ∨Insect head. Indian fakir. Man's head with top-knot. Negro with headdress. Rabbit, rear view. Retort, chemical. Sceptre. Skull and cross-bones. Skulls, two. Swan. ∨Wolf head. Woman's head.

minus

>Fish, two. Flounder. Tulip bulb. Whale.

D 5 plus

Child. Face. >Fish. Flower, petals. Flounder. >Gnome's head. ∨Head of person. >∧Roly-Poly (toy). Sweet-pea. ∨Woman, head and shoulders.

minus

>Dog, rear view. Duck. Insect. Pig. Skull of dog.

D 6 plus

Ball. Bell. Bowl. Boy's head. Cabbage. >Chinchilla, front view. Cut stone. Flower petal. Grape. Vessel.

minus

Bee-hive. Eyeball. Insect. Fish. Walnut.

D 7 plus

∨Beacon light. ∨Human body, headless. ∨Legs, dancers. Priestess. ∨Skull bones of elk. ∨Tail of insect. Twister (path of hurricane).

minus

>Crocodile jaws. ∨Dog's head. Genitalia, female. Man's long nose. Tiger head.

D 8 plus

Amythest. Bow (both blots together). Cut stone. Flower petal. Fossil. >∧Frog's head. Sea-shell. >Tulip.

minus

Insect. Leaf. ∨Monkey's head.

D 9 plus

Butterfly. ∨Cat's face. ∨Creature. ∨Elephant head, front view. Feather. Flower. Fountain. ∨Mammoth, front view. ∨Tiger face. Wings. Water gushing from a geyser.

minus

∨∧Cyclops, two. Genitalia, female. ∨Monster. Pelvis.

D 10 plus

>Liquid, flowing. ∨Moccasins. Seeds, winged. ∨Slippers, ballet.

minus

Finger. Humming bird. Part of nervous system, ventral horns. Penis.

Dd 1 plus

Idol, eastern. Mongolian tent. Mosque, top of.

minus

Bees, two. Cuttle fish. Dog's head. Insect. Vagina.

Dd 2 plus

Butterfly. Rock formation. Skirt. Table top, part of. Wood, piece of.

minus

Tub.

Dd 3 plus

Bivalve, opened. Rocks. Wings.

minus

Fish. Feathers. Flower. Hat, woman's.

Dd 4 plus

Wings.

minus

∨Hip bones. Idol. ∨Ship.

Dd 5 plus

Owl, horned.

minus

Octopus.

Dd 6 plus

Laboratory apparatus. Retort flask.

minus

Sea-horse.

Dd 7 plus

Mitre, bishop's.

minus

Penis. Pincers.

APPENDIX III

POPULAR RESPONSES

CARD I

W as two humans, usually dancing, fighting or holding up something. The head of each person is at upper, outer portion of D 2. They are facing inward with head tilted back.

D 1 as human face in profile is popular. The response often includes D 5.

CARD II

W as a bat is popular.

D 1 as a bat is also popular.

No other winged creature falls within this category.

CARD III

D 1 as two humans is popular. Usually they are doing something together. The popular response may be in a W if the humans in D 1 are noted particularly as part of the response.

D 2 used alone as human detail is not popular.

CARD IV

D 2 as chickens or young birds (two of them) is popular.

D 1 as butterfly or moth is popular.

CARD V

W as Christmas tree or other decorative tree, shrub, flower or floral design is popular.

D 1 as butterfly or moth is popular.

CARD VI

No popular response.

CARD VII

D 1 as one or two humans, frequently women or girls dancing or in other activity, is popular. As a head or part human it is not popular. Two humans in one blot of D 1 is not popular.

D 2 as turtle or tortoise is popular.

CARD VIII

W as two humans, usually holding up an object or in other activity, is popular.

D 1 as an oyster or clam shell, mollusc or sea-shell is also popular.

CARD IX

D 2 or Ds2 as a human is popular. It is often seen as a girl or young woman dancing. Other parts of the blot may be included as parts of costume or stage effects, etc.

CARD X

No popular response.

CARD XI

W as a butterfly or moth is popular. No other winged creature is popular.

D 1 as a human, usually in a sitting, crouched or leaning forward position, is popular. When both D 1 are indicated thus as part of a whole response it is still popular. The person may be described as a creature, mystic, Indian, witch doctor, etc.

D 5 alone as human head is not popular.

CARD XII

D 1 (may also include D 4 and D 11) as a butterfly, butterfly wings or moth is popular. W as moth or butterfly is not popular.

D 3 as a fish is popular.

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Journal of Clinical Psychology

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THE PERSONALITY FACTOR STRUCTURE OF 11 YEAR OLD CHILDREN IN TERMS OF BEHAVIOR RATING DATA*

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Research Objectives in Child Personality Structure Investigations

The objective of this research was to extend into the childhood age range that factor analytic structuring of personality which has now achieved considerable stability of results in the adult age range, by taking the pre-adolescent age range and seeking continuity of the factor structure already found in young adult groups (3-12, 16-20). Some tests common to the two ages were used, in order to establish the identities of factors found. For this reason we chose an 11 year old group, though in the inevitable scatter of ages in the sample taken the range runs from 9-14.

As in the studies in the adult range (5, 6, 8, 9, 10, 12, 17), the research plan has been simultaneously to investigate the structure by (a) behavior ratings, (b) questionnaire responses and (c) objective personality tests. This coordination has placed initially greatest importance on the behavior ratings, on the grounds that (a) the correlation of the questionnaire and objective test factors with the behavior rating factors is the only means of "placing" them in relation to general theories of behavior, and (b) that in this way we can use the personality sphere concept [6] and make sure that our factors do indeed span the best known areas of behavior.

However, since behavior ratings mean different things in different laboratories, and range from true observations on behavior to mere shadows of subjective prejudices and semantic misunderstandings, it is important to emphasize that here as in the adult ratings we have required rigorous experimental conditions not often found in the applied field. Principally we have required that (1) the behavior rated be defined by behavioral incidents, (2) each person be rated by at least 3 people, (although in most instances the effective number of raters was 10), (3) each of the 3 persons shall live, in a residential situation, with the person rated for at least six months, (4) the ratings shall be made on one trait at a time, not one person at a time, and (5) the rater shall not stand in any specialized relationship to the ratee. This generally means that we should deal with "peer" ratings. Although these conditions were as completely met in the present child group as in our three former adult groups, we have reason to believe that the outcome was not satisfactory. The chief reason for defectiveness in the childhood peer ratings would appear to be that behavioral patterns are abstractions from concrete observations, and that the lower mental age of children does not permit them to make such an accurate abstraction. However, it seemed desirable before renouncing the advantages of peer ratings, and before trying to set up the complicated situations required for rating each of two or three hundred children by the same twenty psychologists, in constant contact with the children, to see what could be obtained from the identical procedure as used with adults.

Method

The subjects for the experiment were 173 children, averaging 11.18 years of age, S.D. 1.24, in residence at the Mooseheart School. The group included 81 boys and 92 girls. These children lived in homes, with some 15 children in each, and it was these 15 children who rated each member of their home on the traits to be described below.

The population of the traits chosen was similar to that used in the adult studies, both because the set of 36 traits used in those studies constitute a carefully boiled-down list from the full range of personality labels in the dictionary [2, 6] and also be-

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cause it seemed desirable to maintain continuity specifically with regard to the cross identification of factors from different age ranges. Nevertheless the same labels could not be used, for they would be at too high a level of abstraction for the children and the descriptions of behavior incidents needed to be translated into the realm of childhood behavior.

Three of the traits were new and specific to the child population (e.g. obedient-disobedient) inserted as a possible measure of dominance, and one (17) was virtually a repetition of another (13) to test the effect of some change of verbal form. As a result of representing each of the major adult factors by a minimum of two highly loaded variables, and generally by more (but shared with other factors), we finished with thirty variables, which were hypothesized to represent factors with the following patterns:—

Factor	*Variable*
Previously largely loaded in adult	A:— 1, 13–, 23–, 27 (lesser in 4–, 5–, 9–)
" " " " "	C:— 2, 4, 6, 7, 23.
" " " " "	E:— 4, 10, 12, 14, 16, 27 (lesser in 30).
" " " " "	F:— 8, 11, 13, 17, 18, 22, 29 (lesser in 20).
" " " " "	G:— 1, 3, 7, 23, 27, 28 (lesser in 14).
" " " " "	H:— 17, 18, 20 (much less in 13).
" " " " "	I:— 9, 12, 15, 19, 21.
" " " " "	K:— 24, 26.
" " " " "	L: —5, 9, 25, 27
" " " " "	M:—23, 30.
" " " " "	N:— 28.
" " " " "	O:— 22, 29.

Factor B (intelligence), D (an uncertain pattern) and the factors of smaller variance were thus not represented.

Procedure can be briefly defined as follows. Traits were dealt with one at a time, only two or three coming up for consideration on one day, and the rating was spread over four weeks. On each trait the children were given printed statements together with illustrative and summarizing material which space prohibits here. Critical incidents were discussed. They were asked to cooperate in honesty and anonymity to forget any other rating they had made on the subjects. In each trait they listed among their peers those who were high, i.e. corresponded to the left hand pole description; those corresponding to the right and those they felt were in the middle. They were also instructed to assign only the approximate half of their cottage peers to the medium category and split the remaining half up evenly into the high and low category on each trait.

After discarding any papers with signs of misunderstanding or being carelessly done, the scores 0, 1 and 2 were assigned to the three categories and a score based on two sets of 1 to 7 raters was worked out for each person (commonly five in each set). The reliabilities were worked out (with Spearman-Brown correction) between these halves, and the individual's total scores were then obtained by combining the two halves and dividing by number of raters.

The manner of intercorrelating these ratings and analyzing them will be described after the following section which sets out the definition of the traits.

Listing of the Behavior Ratings

The following is the actual title used plus a skeletal description of the 30 traits as used in discussions described above. In each case the designation on the left is checked under "high" by the subjects:

(1) *Cooperates* –vs– *Does Not Cooperate* (R. = 0.54)
(Adult: "Cooperative –vs– Obstructive")
(A person who joins group activities and helps others vs. a person who is negativistic, refuses help and is a spoilsport).

(2) *Gets Excited* –vs– *Keeps Calm* (R. = 0.99)
(Adult: "Emotional –vs– Calm, Phlegmatic")
(An excitable person with wild mood swings and extreme emotions vs. a quiet person who underreacts, even in extreme situations).

(3) *Does the Right Thing* –vs– *Is Not Always Honest* (R. = 0.65)
(Adult: "Conscientious –vs– Somewhat Unscrupulous"
(A person who is honest and is guided by knowing right from wrong vs. a person who cheats and lies to advance his own interests).

(4) *Acts Differently From The Other Children* –vs– *Does What the Others Do* (R. = 0.66)
(Adult: "Unconventional Eccentric vs– Conventional")
(A person who pursues different interests and activities than others, often for the sake of standing apart vs. a person who copies the crowd in everything).

(5) *Is Jealous* –vs– *Is Not Jealous* (R. = 0.70)
(Adult: "Prone to Jealousy –vs– Not Prone To Jealousy")
(A person who begrudges achievement, possessions, praise and attention in others vs. a person who likes people even if they are better than he is).

(6) *Is Not Worried About Sickness* –vs– *Worries About Sickness* (R. = 0.16)
(Adult: "Not Hypochondriacal –vs– Hypochondriacal")
(A person who disregards pains and aches vs. a person who fusses and complains over real or imaginary pain and illness).

(7) *Quits Before He Is Done* –vs– *Never Gives Up* (R. = 0.57)
(Adult: "Quitting, Fickle –vs– Persevering, Determined")
(A person who works carelessly, in fits and starts, and is easily distracted vs. a person who will work to the finish despite difficulties and temptations).

(8) *Talks A Lot* –vs– *Says Very Little* (R. = 0.55)
(Adult: "Talkative –vs– Silent, Introspective")
(A person who talks incessantly to everybody vs. a person who prefers to think and remain taciturn).

(9) *Is Selfish* –vs– *Thinks of Others* (R. = 0.47)
(Adult: "Demanding, Impatient –vs– Emotionally Mature")
(A person who wants and demands the best things immediately vs. a person who takes his turn and can forego pleasures for the benefit of others).

(10) *Is Sure Of Himself* –vs– *Is Not Sure of Himself* (R. = 0.57)
(Adult: "Assertive, Self-assured –vs– Submissive")
(A person who initiates action and thinks he is right and can do everything vs. the person who gives in, follows, and feels uncertain about his abilities).

(11) *Is Slow About Things* –vs– *Full of Pep* (R. = 0.68)
(Adult: "Languid, Slow –vs– Energetic, Alert")
(A person who procrastinates, daydreams and is slowed down in activities vs. the person who is quick and nimble, full of energy and who never gets tired).

(12) *Does Not Need A Lot Of Attention* –vs– *Wants A Lot Of Attention* (R. = 0.54)
(Adult: "Self-Sufficient –vs– Attention-Getting")
(A person who can work and play by himself without fuss or showing off vs. the person who brags and insists on being in the spotlight).

(13) *Wants To Be By Himself* –vs– *Is Interested In Other People* (R. = 0.42)
(Adult: "Cool, Aloof –vs– Attentive To People"
(A person who prefers solitude and keeps away from others and their activities vs. the person who helps others, listens and is sympathetic to people).

(14) *Does What He Is Told* –vs– *Does Not Obey* (R. = 0.63)
(Adult: "No Equivalent.")
(A person who follows the rules without coercion and always does what older people tell him vs. the person who disregards commands and gets into trouble, and has to be punished).

(15) *Good At Fixing Things* –vs– *Likes to Imagine Things* (R. = 0.20)
(Adult: "Practical, Logical –vs– Sensitive, Imaginative" Approx. Equivalent)
(A person who works carefully on manual tasks familiar to him vs. the person who is full of new ideas and prefers to contemplate and daydream).

(16) *Does What Other People Say* –vs– *Has His Own Ideas About Things* (R. = 0.41)
(Adult: "Mild, Self-Effacing –vs– Self-Willed, Egotistic")
(A person who agrees cheerfully with the decisions of others vs. the person who prefers to abide by his own decisions).

(17) *Likes To Be With Other People* –vs– *Likes To Be By Himself* (R. = 0.27)
(Adult: "Gregarious, Sociable –vs– Self-Contained")
(A person who always surrounds himself with other people vs. the person who prefers solitary activities and avoids people).

(18) *Has Fun Doing Anything* –vs– *Is Not Sure Of Himself* (R. = 0.44)
(Adult: No Equivalent.)
(A person who enjoys uncritically and enthusiastically everything he does vs. the person who hesitates what to do and prefers to figure it all out beforehand).

(19) *Can Not Be Fooled Easily* –vs– *Always Believes What Other People Say* (R. = 0.43)
(Adult: No Equivalent, except "Intelligent")
(A person who is skeptical and foxy and often unscrupulous vs. the person who trusts implicitly and often gets fooled).

(20) *Is Afraid To Do New Things* –vs– *Likes To Try Many New Things* (R. = 0.42)
(Adult: "Cautious, Retiring, Timid–vs– Adventurous, Bold")
(A person who shies away from the different and the untried vs. the person who is eager to experiment with new things and ideas, no matter how difficult).

(21) *Always Needs Others To Help Him* –vs– *Likes To Do Things For Himself* (R. = 0.07)
(Adult: "Dependent, Immature –vs– Independent Minded")
(A person who needs assistance and encouragement and acts younger than his age vs. the person who takes pride in taking care of himself and who knows what to do without help).

(22) *Never Worries About Anything* –vs– *Worries A Lot About Himself* (R. = 0.29)
(Adult: "Placid –vs– Worrying, Anxious")
(A person who is calm and carefree and does not question his abilities vs. the person who is fearful and feels inferior and therefore insecure.

(23) *Does Not Care What Happens To His Group* –vs.– *Wants To Do His Share For The Group* (R. = 0.41)
(Adult: "Frivolous –vs.– Responsible"
(A person who is not considerate and shirks group responsibilities vs. the person who is helpful and cheerfully assumes group responsibilities).

(24) *Does Not Always Behave Well* –vs– *Has Good Manners* (R. = 0.45)
(Adult: "Clumsy, Awkward –vs– Polished")
(A person who is rude and boorish vs. the person who is polite and is aware of proper etiquette and does not hurt feelings).

(25) *Does Not Trust People* –vs– *Trusts People* (R. = 0.58)
(Adult: "Suspicious –vs– Trustful")
(A person who believes that others don't like him and who refers everything to himself vs. the person who is sure that others like him and therefore depends on them).

(26) *Knows About A Lot of Things* –vs– *Is Not Interested In Many Things* (R. = 0.18)
(Adult: "Intellectual, Cultured –vs– Boorish")
(A person who is interested in and informed about many diverse topics vs. the person who is restrictive in his interests and prefers a few simple topics).

(27) *Never Gets Mean* –vs– *Is Mean, When Others Do Better* (R. = 0.31)
(Adult: "Goodnatured, Easygoing –vs– Spiteful, Grasping, Critical")
(A person who can forgive wrongs and tolerate the success of others vs. the person who finds fault, criticizes and who disparages success in others).

(28) *Is Very Particular About How Things Look* –vs– *Is Easily Pleased* (R. = 0.33)
(Adult: "Insistently Orderly –vs– Relaxed, Indolent")
(A person who is very fastidious and who must have everything "just right" vs. the person who is indiscriminate and slovenly).

(29) *Is Often Very Sad* –vs– *Is Cheerful* (R. = 0.51)
(Adult: "Depressed, Solemn –vs– Cheerful")
(A person who is often moody, upset and unhappy vs. the person who is optimistic and likes to be gay and to laugh).

(30) *Is Interested In What Others Think* –vs– *Is Only Interested in Himself* (R. = 0.49)
(Adult: No Equivalent)
(A person who is eager to listen to others and can tolerate differences of opinion vs. the person who insists that people listen to him and agree with him).

The Factor Analytic Procedure

As the distributions of scores on the traits were reasonably close approximations to normality, the product moment formula was used for obtaining the intercorrelations. The correlation matrix was factorized by the simple centroid method instead of the multiple group method as in our other studies, because the former, though slower, seems to give better results in view of the smaller effect of bad guesses upon the size of the communalities. The unrotated factor matrix has been deposited, along with the correlation matrix and the transformation matrix at the American Documentation Institute under Number 90 whence it may be obtained by interested researchers. Two methods of testing for the completeness of factor extraction, namely the Tucker method and the Saunders method [13], indicated that the extraction was probably complete after four factors, or at most after five. However, in the sub-

sequent rotation a sixth hyperplane was clearly seen, so we returned to the original matrix and extracted a sixth factor, and continued with the rotation. This sixth factor exists only so long as it is allowed to assume rather marked correlation with some of the other five factors and we have included it as a curiosity, or at least as something indicating a sixth possibility which should be considered in further research.

The rotation process proceeded by first attempting to split up the first factor. In this case we did not take trial vectors or random trial vectors away from the unrotated position, but moved by small shifts from the original unrotated position, ultimately obtaining a position from which no further improvement could be made after twelve rotations. The rotated factor matrix, and the lambda prime lambda matrix showing the angles among reference vectors are set out respectively in Tables 1 and 2.

TABLE 1. ROTATED REFERENCE VECTOR MATRIX

Variables	Factors (RV's) 1	2	3	4	5	6	h^{2*}
1	07	-17	33	13	03	-03	79
2	05	02	12	-48	03	00	35
3	-05	-13	24	16	04	-12	70
4	03	03	-07	-39	04	-13	37
5	06	48	-17	-05	44	03	70
6	35	-11	-06	15	-19	02	51
7	-10	05	-10	-33	00	02	71
8	06	31	00	-14	13	01	63
9	-01	46	-01	01	22	-12	71
10	37	53	00	04	28	-07	49
11	-50	-13	-02	-14	-02	10	63
12	05	-40	03	-10	-20	-07	65
13	-44	05	10	06	10	22	52
14	01	-06	30	09	23	-04	81
15	39	-04	08	-01	09	05	52
16	02	-04	07	-09	31	-11	60
17	35	04	06	01	12	-40	65
18	50	-04	-07	-18	-01	-19	56
19	47	21	00	10	07	-21	50
20	-62	-07	13	-04	00	-02	65
21	40	22	-03	06	10	-16	63
22	50	-04	-14	01	05	18	59
23	01	28	10	-20	11	01	74
24	03	24	05	-04	-05	09	73
25	-24	21	07	-06	17	22	79
26	33	01	15	-04	15	02	45
27	05	-36	41	-08	-12	27	68
28	-05	01	60	-19	05	-20	46
29	-49	07	-06	-01	-07	-11	69
30	03	-26	22	-07	-05	-11	62
Number in $\pm$ .10 Hyperplane	16	14	19	19	17	15	

*Taken from Unrotated Matrix.

TABLE 2. COSINES OF ANGLES AMONG REFERENCE VECTORS

	1	2	3	4	5	6
1						
2	30					
3	-13	09				
4	-30	42	-08			
5	18	-80	16	16		
6	06	-18	11	13	01	

It will be seen that the percentage of variables in the hyperplane is not quite so high as is usually the case, which may be ascribed perhaps to a relative absence of precision in children's ratings. The reliabilities for the individual traits rated have been set out in the preceding section, where it may be seen that defective reliability as such may not necessarily be responsible for any blurring of the hyperplane which may exist. Among the first 15 traits the reliabilities are not significantly poorer than for adult groups. However, the mean reliability among the last 15 is somewhat poorer, which may be due to the children becoming bored and more careless of the task toward the end of the trait list, which was independently confirmed by observations of behavior. Thus in most instances the children evidently agree among themselves as to what they are rating, but the thing rated may be more global and less particularized than one would desire. The relatively small number of factors—six here instead of the twelve or thirteen in the adult ratings—also would seem to indicate a diminished power of discrimination of behavior among the child raters (unless we assume that the childhood personality structure is intrinsically more simple). The six individual factors will next be considered.

The Psychological Meaning of the Factors

As usual we shall set out the most highly loaded variables in each of the factors, together with the numerical loadings and the index numbers corresponding to their trait numbers. The verbal labels have been reversed whereever that is required by a negative sign in the loading.

FACTOR 1

SURGENCY - DESURGENCY

Adult Factor	Index No.		Loading
H, F	20	Likes to Try Many New Things –vs– (Is Afraid to do New Things)	–62
F, H	18	Has Fun Doing Anything –vs– (Is Not Sure of Himself)	50
F, O	22	Never Worries About Anything –vs– (Worries a Lot About Himself)	50
F	11	Full of Pep –vs– (Is Slow About Things)	–50
F, O	29	Is Cheerful –vs– (Is Often Very Sad)	–49
I	19	Cannot Be Fooled Easily –vs– (Always Believes What Other People Say)	47
F, A	13	Is Interested in Other People –vs– (Wants to Be By Himself)	–44
I	21	Always Needs Others to Help Him –vs– (Likes to do Things for Himself)	40
I	15	Good at Fixing Things –vs– (Likes to Imagine Things)	39
E	10	Is Sure of Himself –vs– (Not Sure of Himself)	37
F, H	17	Likes to be With Other People –vs– (Likes to be by Himself)	35
C	6	Is Not Worried About Sickness –vs– (Worries About Sickness)	35

All but one of the eight F or Surgency-Desurgency markers occur here with the right sign and significant loadings. The exception is "talkativeness" which has shifted to what we later recognize as the E, Dominance factor. However, the difficulty arises that the markers for H also appear here, despite some of them appearing elsewhere. This strengthens the repeated observation that F and H variables tend to occur together and that the factors are difficult to separate. In an earlier simplified

alternative rotation of adult data[7] these two factors were found to be representable as a single factor. A possible interpretation, therefore, is that in children we have a pattern of behavior which later differentiates into "desurgent" and "withdrawn schizoid" patterns. Against this is the fact that a second factor[6] can be found here suggestive of H, and that even when two dimensions are unquestionably present the patterns have proved difficult to separate.

At any rate the essential past character of Surgency as lack of general inhibition, with freedom from anxiety-depression, is fully borne out by the new variables in this pattern. The novelties are an emphasis on readiness to undertake new things[20], on *depending* on the group (21), on practicality (15), on shrewdness (19), on wider information (26), and on the small role of talkativeness (8), variance in which among children seems more determined by other factors.

FACTOR 2

DOMINANCE –vs– SUBMISSIVENESS

Adult Factor	Index No.		Loading
E	10	Is Sure of Himself –vs– (Not Sure of Himself)	53
A–, L	5	Is Jealous –vs– (Is not Jealous)	48
I, L	9	Is Selfish (Thinks of Others)	46
E, I	12	Wants a Lot of Attention –vs– (Does not Need a Lot of Attention)	–40
E, G–, A–, L	27	Is Mean, When Others do Better –vs– (Never Gets Mean)	–36
F	8	Talks a Lot –vs– (Says Very Little)	31
A, C, G, M	23	Does Not Care What Happens to His Group –vs– (Wants to do His Share for the Group)	28
E, M	30	Is Only Interested in Himself –vs– (Is Interested in What Others Think)	–26
K	24	Does not Always Behave Well –vs– (Has Good Manners)	24
I	21	Always Wants Others to Help Him –vs– (Likes to do Things for Himself)	22

Although the adult markers are not exclusively those of the adult E (Dominance factor) the total pattern strongly suggests the modification dominance is likely to take with the lesser moral self discipline applied to it in the child world. However, there are also additions, principally (a) some small but consistent loadings on variables marking the schizoid factors A– and L, (b) the chief markers for Factor 1, 9, 12, 21 (and, slightly) 15, are here, and only here, in significant and consistent loadings (providing we interpret 12 as the "impatient, demanding" behavior, unconnected with the presence or absence of "kindliness").

Since the second chief simplification found in alternative previous adult solutions[7] has been the running of E and A– (and sometimes L) factors together. We are perhaps again seeing a childhood "proto-factor" of dominance with schizoid (A– and L, *not* H) factors, out of which adult E and A– differentiate themselves. The only missing hypothesized loading is in variable 14 (Disobedient), but the presence here of the highest loading anywhere on 24 (Does not behave well) supplies a compensating explanation. Disobedience falls largely in a schizoid factor, because perhaps it is seen by peers more frequently as secret disobedience unseen by the teacher, i.e. not as the outright "bad behavior" which we really hypothesized as dominance behavior.

The possible origin of I factor in E is perhaps the chief contribution for further study here, and suggests some intriguing possibilities.

FACTOR 3

POSITIVE CHARACTER –vs– UNINTEGRATED WEAK CHARACTER (SUPER-EGO STRENGTH)

Adult Factor	Index No.		Loading
G, N	28	Very Particular About How Things Look –vs– (Is Easily Pleased)	60
G, E, L, A	27	Never Gets Mean –vs– (Is Mean, When Others Do Better)	41
G, A	1	Cooperates –vs– (Does Not Cooperate)	33
E, G	14	Does What He Is Told –vs– (Does Not Obey)	30
G	3	Does the Right Thing –vs– (Is Not Always Honest)	24
E, M	30	Is Interested in What Others Think –vs– (Is Only Interested in Himself)	22

The highest loadings here are very clearly those of the G factor. The fact that there seem to be some systematic intrusions of E factor would seem to indicate that in children, at this age, the major problems of self control center on dominance and self-assertive needs (*vide* Adler). The pattern is everywhere consistent with our hypothesis[11, p. 657] of G as the super-ego structure, determining positive action standards (*Particular* about tidiness, obligations, *Cooperative*, *Honest*) and negation of impulse (*Never gets mean*, *Does what he is told*, inhibits dominance behavior). Though the loading on Honesty is not high it is the highest anywhere in the matrix.

Searching for variables which should be here but are not we find 7 (Never gives up) and 23 (Does not care what happens to the group). The absence of an appreciable negative loading in the latter is inexplicable, unless the motivational independence given (especially in a not-too-moral group!) by the super ego gets rated as not having proper concern for the group. On the other hand variable 30 shows that the individual is *interested* in the views of others and not egotistically oriented, as the rating of "interested in other's problems" in the adult G factor requires. Perhaps the only real difference from the adult pattern, therefore, is the low loading here for Perseverance (Never gives up; the loading of 10 is, however, its second highest in the matrix!). Possibly the super-ego in children manifests itself first more powerfully in inhibitions than in the positive features developed later in the adult pattern.

FACTOR 4

EMOTIONAL STABILITY –vs– NEUROTIC EMOTIONALITY

Adult Factor	Index No.		Loading
C	2	Keeps Calm –vs– (Gets Excited)	–48
C, A, E	4	Does What the Others Do –vs– (Acts Differently from the Other Children)	–39
C, G	7	Never Gives Up –vs– (Quits Before He Is Done)	–33
C, G, M, A	23	Wants to Do His Share for the Group –vs– (Does Not Care What Happens to His Group)	–20

This factor has four of the five C variables in its highest four loadings and the fifth significantly loaded in the right direction. The same general resemblance between the C and the G factor exists as with the adult C and G, and it is of considerable theoretical interest to find that in this case the two factors show no sign of collapsing into one but fully retain their characteristic patterns. Some of the significant loadings in the two factors involve the same variables, e.g. interest in what others think, honesty, freedom from worry, cooperativeness. There is, however, a difference of emphasis, indicated in lower loadings, in that C shows less positiveness in obedience, in interest in what others think, in honesty, in knowing a lot, in fear of

new things, in freedom from "meanness" and in enthusiasm (or zest) and in "going his own way." It shows *more* positive loading in freedom from worry. These are additional to the high loading differences visible above, in which G has emphasis on standards (being particular, not showing malice) and C has emphasis on calmness and perseverance.

These differences, putting emotional stability and freedom from neuroticism as central in C and character and high social standards (super-ego) as central in G, fully accord with those recorded for adults[6, 8, 9] and expand them in an interesting fashion. Thus it is particularly clear here that stolidity is not part of G. The high G individuals may actually be slightly *more* excitable than average and slightly more worrying. His self control is part of the aspiration to do the right thing. The high C individual, on the other hand achieves what social excellence he has by stability and absence of neurotic undependability, rather than by aspiration to social values. These findings strengthen the earlier interpretation of C as some infancy-determined or inherited stability-instability and of G as super-ego development.

A word is perhaps necessary on the role of the variable "acts differently from other children" (adult "eccentric") in C–. In an earlier summary[6] of the C pattern we pointed out the very high involvement of ratings of "queer" in Ackerson's extensive clinical record analysis[1]. It would seem that in children "eccentric" is generally interpretated to mean abnormal, irrational, emotionally unpredictable behavior rather than merely "socially eccentric" as in adults. Previous correlation studies, and especially Ackerson's, would certainly seem to indicate, with this, that unpredictable behavior is central to the definition and description, of the C(–) factor instability.

FACTOR 5

Adult Factor	Index No.		Loading
L	5	Is Jealous (Is Not Jealous)	44
E	16	Does What Other People Say (Has His Own Ideas About Things)	31
E	10	Is Sure of Himself (Not Sure of Himself)	28
G, E	14	Does What He Is Told (Does Not Obey)	23
A, I, L	9	Is Selfish (Thinks Of Others)	22

This factor is puzzling, for it has some features of a second dominance factor (additional to Factor 2). But the signs on 14 and 16 would be inconsistent anyway. The markers for L (5, 9, 25) have consistent loadings higher here than in any factor but number 2. It should be noted that there was exceptional correlation between this factor and number 2 (0.80), which we accepted only because two distinct, clear hyperplanes left no alternative. We shall contingently label it L, paranoia, ascribing the "contamination" to the degree of factor intercorrelation, and raising the question as to whether this intercorrelation of dominance and paranoia in childhood may be a systematic, confirmable finding of considerable psychological significance for the genetics of paranoia.

A curious feature of the pattern is that the jealousy, "bigotedness" (sure of himself) and selfishness go with obedience and an acceptance of what others say. The adult pattern is jealous, suspicious, bashful[11], and the two could be reconciled if the obedience and acceptance are a superficial observation of what is more penetratingly rated as bashfulness. The lower loadings here, which we may consider in search of greater certainty, are worries about sickness (6, –.19), wants a lot of attention (12, –.20) and knows a lot (26, .15). Possibly paranoia is not the best term for this pattern ("Conversion hysteria" might fit *some* traits); but the pattern of jealousy, self-centeredness, worrying and bashful conformity at any rate is consistent with what has been labelled L.

FACTOR 6

Adult Factor	Index No.		Loading
H, F	17	Likes to be by Himself –vs– (Likes to be with Other People)	–40
A, E, G, L	27	Never Gets Mean –vs– (Is Mean When Others do Better)	27
H, F	13	Wants to Be By Himself –vs– (Is Interested in Other People)	22
L	25	Does Not Trust People –vs– (Trusts People)	22

This last factor has such small variance (two of the variables are virtually synonymous) that it can only be speculated about, not interpreted. Its one consistent feature in terms of markers is the predominance of the schizoid factors. Although H does not have full representation and is already represented as a "contamination" in the first factor, the total sense of this factor would agree well with H–, and, after that, fairly well with J ("neurasthenia"). It has the withdrawal, the considerate "goodness" and the distrust found in the pre-schizophrenic personality syndrome with which we have previously identified H– factor. But it *could* be a partial picture, through few variables, of J factor, which we had identified[6] with Moore's depression-neurasthenia syndrome.

Exploration of lower loadings shows tendency to be credulous and fooled by people (19, –.21), easily satisfied, indolent (28, –.20); lacks zest, not sure of himself (18, –.19); but does not worry (22, .18). These definitely suggest the schizoid apathy of H–.

No trace of the patterns of factors K, M and O exists in our matrix, though I and A, which also fail to appear as separate factors, show themselves, with fairly consistent but low loadings, "submerged" in other factors at the places indicated. The hypothesis developed three years ago[11] was that, in dynamic structural terms, C and G represent respectively the ego structure (measured as "ego strength") and the super-ego, and that a conscious, emergent integration of these, the self-sentiment, would appear as K factor. Consequently "one would expect a change of the factor picture with age, two factors, corresponding to ego and super-ego, being manifest in children, and a third overlapping factor corresponding to the (developed) self sentiment becoming more prominent in adult life".[11, p. 658]. The absence of K factor would fit this conception. Speculation on causes for the absence of others would be premature till the present findings are confirmed, but, apart from the merging of A with E the rest might have disappeared, simply because they are of small variance, as their original alphabet order indicated.

Summary and Conclusions

(1) Thirty variables, largely chosen to represent the personality sphere already demarcated in adult behavior, have been peer-rated for 173 boys and girls, and factorized to six major dimensions, for which simple structure was attained.

(2) These factors can be identified as having the same patterns as adult factors F, E, G, C and probably L and H, and fall in that order of declining variance. E understandably has a sparse hyperplane, affecting as it does so much of the child personality; but the somewhat poor hyperplanes of L and H are part of an unsatisfactoriness in the general definition of the latter. A high correlation exists between L and E, but otherwise the obliquities are slight. The late childhood personality structure is thus not radically different from that of the adult.

(3) Differences from the adult patterns consist chiefly in: (a) A suggestion of the existence of proto-factors, combining two factors previously noted to be difficult of separation in adult data. Notably the first, large, factor seems to cover behavior of both F and H, and the second to combine E with A–. (b) Some individual variables alter loading from the adult pattern. Notably talkativeness appears more through dominance than surgency, while the behavior calling for inhibition by G is more frequently dominant behavior. (c) Surgency and dominance contribute decidedly more to childhood than adult variance in a tolerably fair sample of the personality sphere.

(4) Factors for which "markers" were inserted but which were not found include I, K, and perhaps A, M and O. Their absence could be due either to a coarseness of rating by children or to an actual absence of these structures at the child level.

(5) Previous hypotheses about the nature of certain factors have received some specific confirmations. Notably the distinction of G and C factors in "character" which interprets the latter as a basic *emotional stability and integration* and the former as a *super-ego* pattern, reflecting the desired acquisition of socially improved inhibitions and dutiful activities, is well supported.

Although the above modifications of factor structure make sense in terms of known principles of child development it would be pointless to speculate on details, or to pass to specific inferences for child development psychology, until the patterns are confirmed.

The chief research progress needs at this moment are (a) a precise repetition of the study, on another adequate twelve-year-old population sample and with independent rotation (if possible also with a separate analysis for boys and girls), (b) a repetition with ratings by adults, in residence situations where this would be possible to combine several adult ratings, to see if with finer discrimination, the structure is enriched by re-appearance of missing factors, (c) in further studies a sharpening and narrowing of the range of critical incidents included in the definition of those variables which the present study shows to be crucial for the definition and separation of certain factors, and for difference comparisons of these factors with those of adults, and (d) a repetition of the study with a seven or eight year old group, further to extend gradually, and with continuity, the mapping of the known factor structure.

A further report will be issued from this laboratory on the relation of the above rating factors to factors found on the same population in questionnaire and objective test data.

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DIRECTIVE PSYCHOTHERAPY: THEORY, PRACTICE AND SOCIAL IMPLICATIONS*

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Social Needs and Scientific Short-comings

It has become popular during the past decade to decry the lag of the social sciences behind the accomplishments of the physical sciences. To a far greater degree than has occurred in the psychological sciences, physics and chemistry have geared their research programs to fit the demands of industry, government and society in general. Perhaps one reason why research in physics and chemistry has had such a practical orientation is because so much of it has been sponsored by agencies which placed very concrete and applied objectives for their research programs. Certainly one of the factors behind the impressive successes of modern medicine has been its dedication to the primary goal of curing disease and alleviating human suffering. In any case, the degree of imaginativeness and solid achievement shown by the older sciences in solving physical and economic problems is indication of the success which must inevitably follow when the resources of science are well harnessed to solve current social problems.

All this has been said in partial apology for the failure of psychological science to tackle some very important issues which laymen are concerned with. I refer to the backwardness of scientific psychology and psychiatry in attempting to cope with the problems of how to resolve conflicting ideologies and personal life styles. One of the purposes of this paper is to relate some recent developments in clinical psychology and psychiatry to some pressing problems of contemporary civilization, and to indicate some possible solutions to the problem of interpersonal and international conflicts. It is our opinion that the psychological sciences are long overdue in offering new analyses and solutions to the problem of how people with different *styles of living* and ideologies are to live peacefully together.

Fortunately, science has outlined the methods whereby an attack can be made on the problem. The first step is to collect the facts (data) concerning the causes of wars and interpersonal conflict in order to discover what the nature of the problem actually is, since it is only after we have achieved a valid analysis of the problem that we can design experiments to provide solutions. As every physician knows, it is necessary to discover what is the matter with the patient before rational treatment can begin. For our purposes, a start may be made by presenting some observations concerning some of the psychological factors which have contributed to the wars of the last 150 years, and interpersonal conflicts in general. The analyses which follow are admittedly superficial but may suffice to outline certain very general trends.

Psychological Factors in Recent Wars

There are many causes of war and it is not our present purpose to list them exhaustively but simply to point out that some wars have much more complex psychological dynamics than others. By psychological dynamics we mean the degree to which (a) personality factors in the lives of war leaders, and (b) ideological conflicts between persons or nations, have determined the pattern of wars. Primitive wars involved a more or less cat-eat-dog, eye-for-an-eye conflict between savages who were strangers and therefore feared each other. The combatants had little in common culturally and no ideological factors were at stake.

With the evolution of civilization, the acquisition of material possessions and power became a motive for conflict. The object was to enslave as many as possible

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in order to pour labor, raw materials and wealth into the hands of the conquerors. The history of the Roman empire provides an example of conquest for purposes of economic exploitation.

It is only relatively recently in human history that wars have been fought to determine the survival of ideas or styles of life. Such wars probably emerged first in religious conflicts intended to settle the question of whose beliefs came closest to the Truth, i.e. the Crusades where a militant support of Christianity was at least as important as the practical problem of holding back the Saracen. The great uprisings in defense of individual freedom, such as the French and American revolutions, may be regarded as variants of the same pattern, namely the question of who is going to tell who what to do. The battle for freedom is essentially the battle for freedom of thought since freedom of action naturally follows freedom of thought.

Feudalism in all of its economic and psychological manifestations was actually a system of thought control in which a few assumed the prerogative of thinking and acting for the many. Such attempts at thought control are also manifested by religious, political, economic, fraternal and social subdivisions which seek to prescribe the conditions of thought and action which its members shall be permitted to engage in.

From all this may be derived a most important conclusion, namely that one of the most primary objectives of all warfare is to obtain psychological control over men either by ruthlessly destroying all who think differently or by forcing them to submit to an ideological reeducation along desired lines. Within this frame of reference, a few comments are in order concerning the psychological dynamics of recent wars.

American Indian Wars. The conquest of the Redmen was, of course, motivated by greed for the land which they controlled. It is not this fact which is significant but rather the psychological conditions under which it was accomplished. As with all new explorations, land seizure was originally accomplished by an unorganized group of individualistic pioneers (probably including many psychopaths and misfits from organized Society) who took matters in their own hands in doing what seemed most direct and expedient at the moment. In the absence of all formalized law and order, might was right and the Peacemaker was a Colt revolver. In contrast with other colonial enterprises where the natives have been converted and civilized by peaceful methods, the American Indian was tricked, deceived, outsmarted and finally overwhelmed by the force of superior weapons and numbers. Is it any wonder that such a proud people preferred to go down fighting in defense of their style of life rather than be engulfed by an alien civilization whose ways they could not learn? The psychological point which we would like to make in connection with the Indian wars is perhaps best summarized by the saying: "The only good Indian is a dead Indian." Behind such an attitude lies the idea that the only way to change the personality of a person who thinks differently is to kill him.

This idea has kept recurring down through the ages in religious, political and social persecutions and with particular prominence during the last 25 years with its purges and concentration camps. Usually, it has not been difficult to rationalize such behavior by representing the conquering force to be supporting God, religious faith, political creed or some other supposedly noble motive. The situation presents a great challenge to social and psychological science. The answer must come from the fields of education and psychotherapy in showing both nations and persons that differences may be resolved by other means than the annihilation of the opponent.

The Civil War. Perhaps more than any other recent conflict, the Civil War in America was a battle of conflicting styles of life and ideologies. Although other factors contributed, this was a Holy War marked by scenes of unparalleled fanaticism and bloodshed in which men died rather than surrender an ideal. The only thing which enabled the greatly outnumbered and economically poor Confederacy to fight on for four years was the fact that men will often fight harder in defense of their beliefs than for any other thing.

The psychology of why a man would rather die than surrender an idea is perhaps not as obscure as might first seem. The very nucleus of mental health and personal integrity is self-consistency or Unity. By the very nature of personality organization, Man is so constituted that he cannot function optimally in the presence of conflict. Not to know, or to have one's rightness challenged, is the primary source of anxiety. For a man to build his life about the nucleus of his beliefs and ideals is to create a personality structure which he cannot tolerate to have questioned concerning its validity. In other words, man's self-confidence is built around a constellation of internally consistent ideas and attitudes, the nucleus of which is the belief in one's own essential rightness. Anything which attacks the validity or self-consistency of one's own core attitudes must necessarily create an intolerable conflict within the personality which can only be resolved by elimination of one of the alternatives.

In other words, the Civil War was fought by men who though ostensibly were defending their ideals, were actually struggling to maintain their own sense of self-righteousness since their own personality integrity had become so closely identified with the cause that they had to defend the cause in order to be consistent with themselves. There are many men (particularly intellectual types) who cannot live with themselves unless they can be true to their ideals, and for whom life is no longer worth living if these ideals are defeated.

Here again exists the problem of how to change the ideals and attitudes which men hold dear without resorting to warfare or extinction. The Civil War illustrates the futility of rattling war clubs and attempting to intimidate the opponent. Men do not abandon their ideals simply on being threatened. To the contrary, any show of belligerency simply unifies the opposition and consolidates determination to resist to the end. Great opportunities have been muffed in the past, but we are again currently confronted with ideological impasses which threaten to engulf everything unless they can be resolved by psychological methods.

World War I. In order to understand the psychological dynamics of Germany's precipitation of World War I, it is necessary to understand the philosophical and social trends which culminated in the mass acceptance of Nietzschean ideas as the group ideal of the German people. The emergence of the Germanic peoples as a unified national group was many centuries in evolving, and the final integration appears to have been accomplished as much by ideological as by political factors. The message of the increasingly influential German school of philosophy and political science was translated into generalized public understanding by Richard Wagner through the emotional and ideological appeal of the lyric and music of his immortal operas. From the exploits of Siegfried in the Ring operas, the German people suddenly visualized the concept of their destiny as Supermen. This sort of a spiritual rebirth of an entire nation might be likened to a mass conversion experience in which everyone developed a new self-concept.

The social effects of this phenomenon were both good and evil. On one hand, Germany entered a period of great industrial, economic, scientific, artistic and social expansion which within a single century lifted her from an aggregation of weak little states to the status of being the most powerfully developed and aggressive state in Western Europe by 1914. Those who remember dimly the peaceful days before 1914 will recall the respect with which Germany was almost universally viewed before World War I because of its cultural achievements. Every student yearned to visit Berlin or Vienna, and a constant stream of students travelled there to attain the ultimate in learning.

It was only later that the world became aware of the insidiously unhealthy aspects of German Nationalism with its haughty, autocratic Prussian concepts of its own superiority over other peoples. The concept of the Superman carried implications that the Superman is more able and therefore knows best and should tell others what to do. While during the stresses of the war years it was then fashionable to depict Kaiser Wilhelm as the diabolic schemer of world subservience to the master

race, later perspectives have placed him in his rightful position as merely a tool which happened to be available at the psychological moment when trends were coming to a head. World War I may be more properly regarded as a social convulsion stimulated by psychological forces which had remoulded the style of life and the ideological composition of an entire people, and resulting in a national mental complex which was at once a source of great strength and also a source of paranoid delusions of grandeur.

And so again, we view a constellation of psychological forces which impel a people to war through the acting out of the logical consequences of ideas. It is not sufficient to consider only the personalities of the leaders since unless the people had been ready their leaders could not have led them into such a bitterly contested war. German Nationalism and aggressiveness would appear to be but a reflection of an underlying *Weltanschauung.*

The Napoleonic Wars and World War II. Psychologically, there is much in common between the Napoleonic wars and World War II. In both, the personality of a single man overshadowed all other forces in precipitating conflict. Both Napoleon and Hitler arrived on the human scene at times when great national forces were striving for expression. The French people had come through the Revolution with spirits uplifted, with increased awareness of their own strength and destinies, and with a need for disseminating their hardwon ideas throughout the world. Similarly, the German people had come through World War I with feelings of frustration and unfulfillment which prepared the soil for Nazi Socialism.

While Napoleon was regarded as an insane brute by the people in neighboring countries which his actions threatened, it would be stretching the evidence to conclude that he was mentally disordered beyond the normal degree of emotional instability or neuroticism manifested by any of us. His actions as an iron handed conqueror in spreading abroad the principles of the French Revolution had an incalculable effect on all who came in contact with them, and probably marked the beginning of the most important shift in the balance of power in human history—namely, the shift in power from the aristocracy to the masses which was finally consummated recently during the administration of Franklin D. Roosevelt when for the first time in history Labor gained ascendency over Capital. Whatever our opinions concerning the good or evil effects of Napoleon's actions, it cannot be overlooked that he represented a new style of living and thinking which soon influenced all it touched.

Adolph Hitler was another person whose ideas singlehandedly changed the course of history, so that it is necessary to consider both the nature of the personality which originated the ideas, and also the nature of the ideas in their own right. As compared with Napoleon's, Hitler's personality and ideological composition were undoubtedly much more malignantly unhealthy. Napoleon's regimes were not marked by anything as antisocial as the persecutions and concentration camps of Nazi Germany after the first bloody aftereffects of the French Revolution had died out.

It is our opinion that to date, no satisfactory psychological diagnosis of Hitler's personality has been advanced. The feelings of outrage stimulated by Hitler's actions during World War II led to his characterization in popular opinion as an insane paranoic in the same manner as Kaiser Bill was pictured as a bloodthirsty monster who murdered little children. While some of Hitler's individual actions during moments of stress and particularly toward the end of the war when things went against him undoubtedly reflected great emotional instability and parancid reactions, it does not seem justified to label him as having a paranoid psychosis during the years of his first successes.

Great caution should be exerted in making retrospective diagnoses of controversial world figures, and labeling them as mentally disordered or psychotic because of the social outcomes of their beliefs and actions. There is great question whether a psychotic or severely disordered person could ever hold office for long under mod-

ern forms of government. It is too easy to label all those whose ideas or styles of living differ from ours as being insane. We must conclude that neither Napoleon nor Hitler were insane in the customary usage of the word even though each had many pathogenic factors in their early developments and both showed marked emotional instability and neuroticism under stress. The social malignancy of Nazi philosophy appears to be due primarily to the falsity and unhealthiness of the ideas which comprise it. Man becomes most dangerous when he feels impelled to act out malignant ideas.

In our opinion, a new category or type of behavior disorder should be postulated to properly designate the group of personality reactions of which Hitler's case is an extreme example. Two years ago from this same rostrum, we described a new classification of personality disorder designated as the *attitudinal pathoses*, and which we now prefer to call the *attitudinal psychopathies.*[5] An attitudinal psychopathy may be defined as a personality disorder characterized by the holding of unhealthy and pathogenic ideas or attitudes acquired through normal learning experiences (and not necessarily neurotic or psychotic) but which are so maladaptive that any attempt to act them out results in personal-social maladjustment.

While Hitler was unquestionably very neurotic in terms of anxious, phobic, obsessive-compulsive, hypochondriacal behavior, the term psychoneurosis is inadequate to describe the whole ramification and significance of his ideology and attitudes except in that his psychoneurotic reactions became more severe as life tensions increased toward the end. Hitler's ideology as reflected in *Mein Kampf*[2] outlined a style of life whose influence must be considered in its own right and independent of the background of neuroticism, poor education, intolerance and social stress which spawned it. The Nazi movement not only reflected the life and times of Hitler as an individual, but the ideas involved therein constituted a continuing influence which must inevitably influence the life of anyone who accepts and acts them out. It is this influence of ideas and attitudes upon behavior which constitutes an attitudinal psychopathy when these underlying ideas and attitudes are pathogenic and socially maladaptive.

It is illogical to brand the young generation which grew up under Nazi Socialism as being neurotics or psychotics (other things being equal) simply because their behavior reflects the acting-out of a style of life developed under educational auspices which we hold to be unhealthy. We need to think in an entirely new way about conflicts on personal and international levels which reflect conflicting attitudes and ideologies. The diagnosis of *Attitudinal Psychopathy complicated by neurotic and/or psychotic personality reactions to life stress* not only describes Hitler and some other disruptive world figures but also aptly characterizes the many millions of obscure persons who get into personal and social difficulties because of the maladaptive ideas and attitudes which they attempt to act out. Formerly, such people have been recognized as being eccentric but no adequate label has been invented except the grossly undifferentiating term "neurotic".

Interpersonal Conflict On Local Levels

As older theories and diagnostic categories have proven inadequate to describe conflict on international levels, so our psychiatric classification systems fail to provide adequate designation for the conflicts and maladjustments of everyday life. These gaps or blindspots in psychiatric classification systems stem from the origins of modern psychiatry in the mental hospitals. Only a limited number of types of personal-social maladjustments are caused by the psychoses, psychoneuroses or psychopathic personalities and hence end up in mental hospitals. On the contrary, some of the most acute maladjustments do not stem from mental disorder at all and hence have not generally come under the scrutiny of psychiatry. In spite of this fact, it has been tacitly assumed by many psychological and social scientists that all maladjustments are due to mental or emotional disorders and consequently an attempt is made to classify every maladjusted person as "neurotic", "psychotic" or "psychopathic".

In the following discussion, we do not pretend to offer much which is original but are simply attempting to reorient some old facts in a more comprehensive framework. Alfred Adler[1] was one of the first to recognize the importance of "style of life" as a distinguishing characteristic of a person. Entirely through normal processes of learning or conditioning, every person acquires a distinctive set of habits, reactions, ideas, opinions, beliefs and attitudes which constitute his style of life. This style of life has internal consistency due to the consistency of the attitudes or ideas upon which it is based, and is manifested by thousands of distinctive patterns relating to everything from talking, writing, emotional expressiveness, posture, dress, food preferences, work habits, etc., to how loud we like the radio or how far up we want the window at night. The social significance of style of life is that every style of life is in potential conflict with every other style of life not only in opposing action tendencies but also when it comes to the point of deciding what to do in any particular situation.

Science has been long overdue in recognizing that most human conflict results from the essential opposition of different styles of living, and from the persistent historical attempts of men to convert others to their own styles of living. The practical necessity of having to deal daily with the conflicting life styles of many other people leads to a type of personality reaction which we like to call *people fatigue.*

Coping With People

People are problems. It is necessary to expend energy in coping with the habits, needs, desires, opinions, beliefs, attitudes and general life style of another person. The problem is accentuated when large groups are thrown together with the production of countless little irritations which interfere with personal freedom and impose demands. Every act of a person reflects a need or a preference. Since no two persons ever hold the same motivational systems, even the simplest acts may stimulate or reflect conflicting needs or desires. People with homogeneous cultural backgrounds may have similar enough life styles as to minimize conflict, but heterogeneous religious, social, political, economic or educational backgrounds may produce such grossly different life styles as to minimize chances of compatibility. In our opinion, these conflicting ways of living constitute the major etiological causes of everyday tensions and irritations between people, and are responsible for many types of maladjustment which have not been systematically studied by psychological science.

The crux of the problem is that the normally confident person acts as if *his way* is best, that he knows best, that other ways are erroneous or inferior. Usually this state of self-satisfaction with one's own style of life also implies a tendency to try to influence others to adopt similar life styles. In spite of all the moderating and tolerance-producing influences to which we all give lip service, few of us are able to avoid the tensions and irritations attendant upon group living and few of us are able to resist the impulse to try to convert others.

Proof of this observation lies in the fact that very few of us can stand strangers in our homes for more than a few days without developing progressive irritation. The first couple of days we are all on our good behavior but soon we get upset at this interloper who gets up too late or too early, who picks up the newspaper first and disarranges it, who turns on the radio too loud or too soft, who complains about the cooking or eats more than his share, who is too noisy or too quiet, who borrows our car and picks his teeth and has bad breath and rapidly becomes an annoying foreign body in our erstwhile happy home. Thus the course of the visit deteriorates until the last couple of days when all perk up under the realization that shortly all can resume their old styles of living undisturbed. In other words, all situations of group living contain the nuclei of interpersonal tensions which may become magnified into open frustration, hostility, aggression, intolerance and aversion among the persons involved.

Situational Reactions

Clinical observation indicates that different conditions of living involve varying amounts of interpersonal tensions resulting from conflicting styles of living, and that the incidence of such conflicts is increasing with the increasing complexity of civilization. A hundred years ago, communities were smaller and much fewer demands were made. Children had to cope only with their own families, a few neighbors and a few children at school. Today in crowded urban living, the average person must cope with hundreds or thousands of others in school, work and social life.

Situations in which large numbers of people are closely confined with lack of privacy and much group regimentation are particularly productive of fatigue reactions. In contrast with the hermit who has no one to cope with but himself, a popular figure such as a President must make some adjustment to the life styles of thousands of people, abandoning individuality and conforming to whatever is expected of him. This is also seen in military service where men are abruptly required to abandon personal preferences and conform to a system. Certain classes of personnel had greater psychosocial demands put on them than others. For example, chaplains or recreation directors are always expected to express positive feelings in order to appear congenial and friendly. Similar reactions are noted in civilian life where the welfare of many may depend upon the whims of a few. Even such trained personnel as psychiatrists or counselors may become "stale" when required to cope with human problems too continuously.

In order to study the problem in a most intense form, one has only to live for a trial period in a large ward in a crowded mental hospital. Here a person has only a bed to call his own, having to compete for sitting space on the benches around the walls or at dining tables, living in a constant din of noise and bickering, having no privacy even in the bathroom, and being forced to depend and cater to others for even the simplest privileges. In a society which usually provides better living accommodations for its cattle than for its mental patients, is it any wonder that many people prefer suicide to institutionalization? Such conditions are bad enough for those who can secure positions of leadership in the group and become intolerable for persons who are unable to hold their own and become the victims of all the aggressions inherent in the situation. It has been said that one of the chief benefits of wealth is that it permits its owner to escape from close contacts with the masses, i.e. to satisfy the need to be undisturbed in one's own life style.

An Hypothesis

Animal psychologists have classified the basic drives such as the need for food, water, shelter, sex and maternal urge which have been accepted as the roots of human conduct. Perhaps for humans, we should add another basic drive, namely *the need to be left alone and undisturbed in our distinctive life styles.* Each person has only a certain amount of energy or ability to cope with other people, or in other words, a threshold above which he may develop pathological reactions and symptoms if situational demands exhaust his personality resources. The syndrome of situational psychopathy resulting from having to cope too continuously with too many people, or too intensively with any one person, may be called *people fatigue.* It involves essentially a breakdown or depletion of a person's ability to cope with the demands made by conflicting styles of living. A person may show "people fatigue" when he reacts with a neurotic anxiety-tension state associated with feelings of intolerance, aversion and inability to "stand" other people any longer. Or he may react with withdrawal of interest from other people, by hermit reactions, by emotional blunting and many other reactions which, however, must be recognized as being only secondary to the basic cause. The condition may be acute, chronic, specific, diffuse, depending upon the extensity, intensity and duration of difficult contacts with other people.

One of the implications of this hypothesis is that society might well make provision for minimizing people fatigue by reducing the social demands upon any one

person. The melting pot idea wherein all are thrown together in one happy family has bad as well as good potentialities. Personal preferences cannot be legislated and neither can feelings. Instead of insisting that heterogeneous groups must relate closely with each other, it may be desirable to make provision for isolation and more privacy between those whose styles of life are most conflicting. Too much insistence on conformity and adaptation may be undesirable if it wipes out individuality and stamps all men in a common pattern. It is desirable to live and let live, with sufficient living space for all to express themselves in.

Some Implications for Psychotherapy

If it is true that the psychosocial pressures produced by conflicting styles of life constitute a major cause of personal and group tensions with a resultant incidence of abnormal personality reactions, then psychotherapy must concern itself with the evaluation and modification of such unhealthy or deviant ideas, beliefs and attitudes which may be the roots of maladaptive *actions*. We can summarize the hypothetical model situation by stating the following basic postulates:

I. According to the laws of *ideo-motor action*, individual behavior patterns tend to reflect the ideas, beliefs and attitudes which a person acquires through learning. Ideas, beliefs, sentiments and attitudes largely determine a person's habitual life style.

II. In a world of conflicting ideologies and beliefs, it follows that not all alternative ideas, beliefs and attitudes can be equally valid. Some ideas are true, good and healthy. Others are false, bad and unhealthy.

III. One of the pressing and socially important obligations of psychological science is to discover and utilize methods for determining the relative validity or truth of conflicting ideas, beliefs and attitudes.

IV. According to the highest standards of time and place, every therapist may assume the duty of attempting to modify such false or untenable ideas and attitudes as may be dangerous to health. This is to be accomplished according to the laws of learning in a reconditioning process in which the client learns a better and more healthy style of living.

V. In order to accomplish such ideological or attitudinal reorientation, the therapist is empowered to temporarily assume responsibility for such directive or regulatory training techniques as may be necessary to accomplish such goals in situations where the client is unable or unwilling to undertake such objectives using his own resources.

VI. In summary, in appropriate cases a major therapeutic goal may involve the reorganization of a person's entire *style of life* through systematic modification of maladaptive core attitudes.

VII. This does not necessarily mean that all persons are to be fitted into one pattern, or that any one ideology is to become a model for the whole world. On the contrary, it is recognized that many different life styles may be basically normal and healthy. While attempting to eradicate unhealthy attitudes, individuality must at the same time be preserved to such degree as it is healthy.

Directive psychotherapy is therefore a method for deliberately modifying another person's life style. It will be immediately recognized that such an undertaking involves grave responsibilities on the part of any therapist who attempts such a basic reorganization of another personality. Attempts to modify personality by means of *thought control* are not new, but have been utilized down through the ages by educators, clergymen, physicians and politicians. The history of mankind contains numerous examples of both the good and bad effects of thought control. In the hands of the unscrupulous or evil, thought control has resulted in some of the most horrible human tragedies. In the hands of the wise and good, it has been one of the ennobling influences. The stakes are great, since he who controls men's minds controls the most powerful forces on earth. The present situation of ideological conflict throughout the world reflects the fact that unceasing struggle goes on to win converts to the ideological systems advanced by the major political forces today.

And it may well be that military conquest will yet succeed in losing the battle unless it is complemented with psychological conquest of the ideological systems which stimulate men to war.

In the past, Science on the whole has avoided entanglements with value systems either on educational, clinical or political levels. Modern psychology has concerned itself first with being scientific, and has therefore only dealt with such relatively

low level behavior as reflexes, sensation, perception, memory and learning which are amenable to existing methods. In contrast, science has only recently and hesitatingly attacked the problems of such high level functions as ego structure, ideological composition and life style which are only with difficulty amenable to existing methods.

In the future, it is difficult to see how scientists can avoid the responsibility of dealing with the practical social implications of conflicting ideologies and life styles on both individual and national levels. For who is better suited, both in terms of knowledge of methods and in the evaluation of data, to establish standards for what is true, good and healthful? Science is essentially a method for discovering the truth stated in terms of objective measurements and statistical probabilities. Of all the various persons called upon to deal with human problems, the scientist has the most complete and valid methods at hand for their solution.

Perhaps one of the reasons why systematic modification of ideas, beliefs, attitudes and life styles has not been previously attempted on a large scale in America is because most of us have had a profound suspicion and distrust of anyone tampering with the ideology of our children. American educational curricula are notable for their concentration upon "facts" and their avoidance of controversial topics which might cause offense to some pressure group. The American way is for everyone to mind his own business and not to meddle with the eccentricities or whims of others who are content with themselves. But the question becomes more complicated when the question is raised as to whether a duly licensed psychiatrist or psychologist does not have an obligation to attempt to modify attitudes and life styles which are maladaptive and unhealthy in the same manner as the physician feels obligated to treat disease once it is discovered.

It must be immediately recognized that in their current stages of evolutionary development, psychology, psychiatry and mental hygiene have only begun to accumulate sound criteria of what constitutes mental health, and particularly in the area of ideological composition and life style. There is still much difference of opinion among psychological scientists concerning what is to be considered true, good and mentally healthy, and they are relatively late comers in this field which had long been preempted by theologians.

Among the first tasks of psychological science will be the evaluations of moral and ethical codes or criteria of good behavior which have been offered by religion on the basis of revealed truth, and by others on the basis of educational, political or philosophical biases. It is to be anticipated that there will be many conflicts between various authorities as scientific facts challenge older ways of thinking. One such schism has already occurred in the denunciation of psychoanalysis by religious groups.

But the whole project should not be held up because of the admittedly inadequate and experimental status of current theory and methods. The medical profession has long since established a procedural model for what can be accomplished in its acceptance of the ethical principle that a practitioner can only be held responsible for maintaining standards up to the average level of time and place. In other words, we must do the best we can with the respectable fund of knowledge which is already available while at the same time recognizing limitations and striving to increase our knowledge by scientific research.

An Evaluation of Current Methods of Psychotherapy

Before choosing the tool for a given task, it is first necessary to understand the characteristics of the tool as well as the nature of the problem in order to comprehend what can be accomplished. In the field of psychotherapy, it must be clearly recognized that all methods have definite indications and limitations. With particular reference to the type of problem now under discussion, it is our opinion that existing methods are largely incapable of dealing with them adequately.

Modern psychiatry has concerned itself largely with the more severe degrees of psychoses, psychoneuroses and psychopathic personality. It rarely has opportunity

to study normal people whose maladjustments result from unhealthy attitudes and life styles unless such a person happens to develop a more serious secondary personality reaction. There are no categories in existing psychiatric nomenclatures capable of differentiating these types of maladjustment. Some psychiatrists attempt to deal with such problems using the rationalization that neurotic complexes inevitably underly unhealthy attitudes. This assumption may be true in the psychoneurotic patient whose whole motivational system is determined emotionally but it is probably not true of the much larger group of basically normal people whose life style is determined by learned patterns derived from whatever culture they happen to be influenced by. We must conclude that modern psychiatry has not recognized or dealt with this type of problem.

In spite of the current prestige of psychoanalysis which has reached a peak of influence with modern psychiatry, analytic methods have great limitations both in respect to the type of problem and case for which they are suitable. Psychoanalysis has made a great and lasting contribution in the study of deep neurotic emotional disorders, but has erred in attempting to postulate the determination of almost all behavior by unconscious emotional complexes. Indeed the analysts have been curiously shortsighted in failing to integrate the contributions of American behavioristic psychology and psychobiology with their emphasis on a wide variety of biological and conditioned factors in personality development. Psychoanalytic theory places undue emphasis on the unconscious determination of behavior by past emotional conditionings, and fails to give proper weight to the pattern of the organism-meeting-its-*present*-environment. While psychoneurotic persons may be controlled by neurotic conditionings of the past, one of the characteristics of normality is the ability to integrate and react to all pertinent factors in the present. It is erroneous to classify all persons who hold deviant attitudes or styles of life as being neurotic when actually they may simply be the products of different cultural and ideological milieu.

By virtue of their nature, psychoanalytic methods should be limited to those who (a) have problems of deep emotional nature, (b) are cooperative enough to be analyzed, (c) who are young and flexible enough to justify such an expenditure of time, and (d) who can pay for it. If these criteria are all observed, it will be seen that only a very small number of cases are suitable for psychoanalysis.

A most significant development in psychotherapy during the last decade has been the discovery of nondirective methods by Carl R. Rogers.[4] Nondirective methods have made great advances in learning how to deal with certain types of emotional problems. It is essentially a reaction against the crude use of the traditional directive methods which Rogers correctly recognized as frequently being counselor-centered rather than client-centered, and foisting upon the client influences which were not suited to his needs. Nondirective methods are very effective with persons who have developed sufficient inner tension so that they are motivated to seek help, who have sufficient growth resources within their own personalities to be able to work out their own solutions to problems, and who are well enough to take the necessary steps to translate insights into action. Unfortunately, large numbers of cases are automatically rejected as suitable clients for nondirective therapy because (a) they feel no need for change, (b) are usually referred for treatment by external authorities against their will, (c) they do not have sufficient inner resources to solve problems alone, or (d) they are too sick to accomplish it nondirectively. While nondirective methods have been very effective on college level counseling, they may be ineffective and contraindicated on other levels where more directive techniques are required. For example, we may conjecture concerning what success a nondirective therapist would have in modifying the life style of Adolph Hitler.

In summarizing the strengths and weaknesses of existing methods of psychotherapy, a number of conclusions are suggested. First, clinical psychiatry and psychoanalysis have failed to reach maximum social effectiveness because of their immature prescientific stage of evolution in which the field is confused by a babel of

conflicting schools and claims. Behind this state of confusion lies the failure to base clinical theory and practice solidly on the basic science of psychology. Second, psychology itself is partly to blame because of its concentration on the complexities of scientific methodology to the exclusion of concern with social applications. Third, the schools of the past have literally been playing one stringed violins in the sense that most of them have over-emphasized certain facets while ignoring large issues from other pertinent areas in the field.

The greatest need has been for an eclectic and comprehensive theory and practice which would integrate all relevant knowledge in a genuinely global attack upon clinical problems. Human behavior is infinitely complex in its derivations, and will not be elucidated by any system which deals with only limited aspects of behavior. It was in the attempt to synthesize an eclectic theory and system of clinical practice that we have outlined the nature of all known methods of therapy in an eclectic textbook entitled *Principles of Personality Counseling.*[6] This book presents the first comprehensive statement and integration of the indications and contraindications of all known methods within a psychobiological orientation based solidly on basic science psychology and applied to a much wider range of clinical problems than have formerly been considered suitable for psychotherapy.

The Nature of Directive Psychotherapy

Directive psychotherapy is not a new school or complete system in itself but simply an eclectic method suitable for dealing with specific types of personality problems. We have always regarded the attempt to establish new schools of clinical practice as being artificial and harmful to scientific progress, since the only truly scientific approach is the eclectic method of utilizing all known methods according to their indications and contraindications.

Our own approach to counseling and psychotherapy is based on the contention that all of the effects of psychotherapy must be explained in terms of the psychology of learning. All methods of psychotherapy may be classified under the two general headings of (a) *establishing suitable conditions for learning to take place*, and (b) *providing suitable training situations* according to the psychology of learning so that reconditioning actually takes place and is translated into action. It is very important to understand this distinction. Under the heading of establishing suitable conditions for learning, we would include many of the techniques of psychoanalysis and nondirective therapy which are intended to create rapport, analyse early childhood conditionings particularly of traumatic emotional nature, to deal with emotional repressions and blocks to self-expression and growth in the present, and generally to unlearn older maladaptive patterns and to gain insight into how we got that way. But analysis and emotional release and the acquisition of insight are often not enough and do not inevitably result in cure. It is then necessary to undertake the second part of therapy which involves an active reconditioning process which must not be considered complete until insights are actually translated into action. Much of the psychotherapy of the past has failed because therapist and client did not work hard enough in practicing newer patterns until they were actually mastered. In other words, it is necessary not only to know what is the matter and what to do about it, but also to work hard until newer styles of life are mastered and become an organic part of the client.

Directive methods are based on the hypothesis that the learning of newer adaptive patterns must depend upon maximum utilization of intellectual resources in personality. To gain or regain mental health may be regarded as an exercise in problem solving behavior in which learning or relearning are the principal tools. Except in relatively mild cases, the solution of the problem cannot be left on a *laissez-faire* basis to the client himself since he has usually already demonstrated inability to cope with life alone. As in medicine and all other clinical specialties requiring long training and experience to deal competently with all factors involved, it follows that psychotherapy demands the most complete training and experience

which is available at time and place. The ultimate responsibility in difficult cases must be left with the therapist to direct the learning process inherent in all psychotherapy.

If it is accepted that some sort of learning process underlies all psychotherapy, it follows that among the objectives of the therapist are (a) to make a diagnosis concerning the nature of the problem in all its ramifications, and then (b) to devise and institute suitable training procedures for the correction of pathogenic factors. Here, as in almost all clinical practice, the primary and most difficult objective is to discover the nature of the problem, after which suitable remedies usually become apparent. Diagnosis is therefore the foundation of all scientific clinical practice. In our opinion, current diagnostic methods and categories are woefully inadequate, and the task with number one priority in the future will be to reevaluate the whole problem of diagnosis and diagnostic categories.

At this point we may restate a number of premises which underly directive therapy of all types.

1. The therapist is essentially a *master educator* who takes over where society, family, education and the person himself have failed to condition healthy behavior.
2. The first stage of therapy consists in establishing suitable conditions for learning a new style of life. This includes establishing rapport, analysing past conditions of traumatic nature, releasing emotional repressions and blocks, and giving the client maximum opportunity to solve as much as he can by himself.
3. The concept of directiveness implies that someone must discover what is the matter, what to do, and see that it is done. This involves diagnosis which cannot usually be accomplished by the client alone. This also involves the great issue of what is to be done therapeutically.
4. The issue is sharpened when facing the concrete decision of *when*, *where*, *how*, and *why* to interfere in another person's life. What is the authority for determining how another person shall be influenced therapeutically? In the past, such vested interests as religions, educational institutions, political parties and other pressure groups have regarded themselves as suitable authority. None of them are completely valid and satisfactory.
5. It is postulated here that the scientific approach provides the most satisfactory authority for undertaking directive therapy. As here used, the scientific method is regarded as the ultimate method of establishing validity and must be given precedence. According to standards of time and place, the broad scientific training provides the highest standards of competence. Science is the common ground on which conflicting authorities must come to agree.

The Psychology of "Ought"

In his *Psychology and Ethics*, Hollingworth[3] made a scientific study of the different categories of imperatives implied in the concept of "ought". When we seek to influence another person by advising that he *ought* to do something, there exists an underlying assumption that there is some standard, duty, sanction or principle which provides a legitimate or imperative reason why the person should carry out recommendations. On the basis of his experiments, Hollingworth was able to establish the following categories of imperatives which we have arranged in rough order of clinical importance as bases for seeking to influence a person therapeutically:

1. *Health*: Personal health or safety requires it.
2. *Rational Inference*: Certain premises lead logically to the conclusion, i.e. there is only one *right* solution to a problem and all others are of lesser validity.
3. *Legislation*: The law requires.
4. *Welfare*: Social welfare prescribes it.
5. *Justice*: Justice and equity demand.
6. *Duty*: Ethical or religious scruples, or matters of conscience, are involved.
7. *Pleasure-pain*: Personal needs indicate indulgence or avoidance.
8. *Utility*: Expedience or practical utility require.
9. *Custom*: Conventional propriety or customs demand.
10. *Completion*: The Gestalt need for closure or completion.

The length of this list of imperatives indicates the complexity of factors influencing personal decision. But behind such a list lies the conviction that every normal person has enough control to choose and act upon the factors involved. In rating the

importance of each factor clinically, wisdom and judgment must be used in balancing all the factors involved. One of the problems of therapy is to make the client aware of factors which he has ignored or to reevaluate their imperativeness. In any case, the list above provides the therapist with a list of values for his own guidance in directing therapy.

In a sense, the values in this list reflect the maturity of behavior development as it evolves from selfishness to altruism. Perhaps one criterion of mental health is the degree to which each person is able to weigh these various imperatives and to achieve a practical and healthy balance. Indeed failure to heed social demands, both in terms of written and unwritten law or conformance with ultimate values, results in personal or group misfortune.

We have placed the imperative of *health* at the top of the list in the present therapeutic context because the mental health movement is essentially an effort to implement the "ought" of health by compiling data concerning what constitutes mental health and how to accomplish it. Tyson [7] has collected a list of the principal directives which have appeared in the mental hygiene literature. Such compilations make an important contribution by summarizing human wisdom concerning what should be done, and it is desirable for similar studies to be collected in related fields.

Thus in our own practice, we leave no stone unturned in giving attention to all facets of adjustment which may contribute directly or indirectly to a more healthy style of life. This involves not only analytic or nondirective handling of emotional problems but also the maximal potentiation of intelligence in learning healthier patterns. This approach does not emphasis one factor at the expense of others. One of the commonest criticisms of directive therapy is that it is too "intellectualistic"—placing an over-optimistic evaluation upon the power of rational intellect at the expense of ignoring or minimizing instinctive-emotional factors. This criticism is supported by the current popularity of analytic depth analysis and of nondirectivism. But it need not necessarily be valid, since the directive therapist should use analytic or nondirective methods along with any others which may be indicated.

One of the most essential conditions for directive therapy is the ability on the part of the therapist to be patient in assisting the client in the tedious hours of analysis, release of emotional conflicts and practicing new patterns of learning. The human mind can assimilate new material only very slowly. New ideas cannot be acquired and put into action overnight since they inevitably create conflict and confusion while older patterns are displaced by new. It must be anticipated that resistance will occur, and it is not the client's immediate reaction which counts but what he does much later. If it takes ten years to become an accomplished athlete, artist or craftsman, how can we expect it to take any less to acquire new controls over emotions?

In our opinion, many of the failures of directive therapy in the past have been due to their too brief and superficial use.

Some Implications for American Planning

In a world characterized by a relentless competition for control over men's minds by ideologies of varying degrees of validity and healthiness, it may be dangerous to sit back complacently and hope that Truth will prevail and that persons and nations can be trusted to straighten themselves out when left alone to their own resources.

Our American culture has evolved in a land of physical immensity where it has been both desirable and feasible for people to mind their own business. No one has cared how eccentric a man might become as long as he did not become a public nuisance or dangerous. Up until the 20th century, our geographic insularity lessened the threat of conquest and made us careless of the intentions of foreign powers.

But now suddenly, mechanical conquests of time and space remind us that we are living in ONE world and that we must take heed to what others are thinking and planning. We cannot ignore the impacts of conflicting ways of thinking and acting since it is their nature to create tension and warfare until one way of life

dominates the others. Man's mind is so constituted that it cannot tolerate conflict and inconsistency, or to hold opposing beliefs at the same time. Animal experiments have proven that to attempt to respond simultaneously to conflicting stimuli results in neurotic behavior. Nature abhors a vacuum, and in the absence of truthful knowledge, men tend to believe what they are told with first impressions exerting the greatest influence.

The mental hygiene movement started out with the original objective of preventing mental disorder. In our opinion, a more important goal lies in the area of advancing healthy ideologies and styles of living. Also, counseling and psychotherapy must deal with new and broader problems. In the past it has sometimes seemed as if psychologists were living in little white towers and among the last to face the issues and challenge involved in the whole problem of how to live in health and happiness. Unfortunately, such activity is being accomplished on large scales under the wrong auspices. Autocrats and totalitarian states down through the ages have regulated and regimented men's lives according to the prevailing fads of the moment.

We are now suggesting that psychological scientists must take over the problem of advising us how to live. The dangers in such an attempt are great since recent history has shown us how ostensible scientists can be perverted and prostituted by political pressures which break down personal integrity. Undoubtedly failures will occur due to errors of judgment or abuse of power but in the same manner as the medical profession has generally lived up to its ideals throughout the world, so we have confidence that psychological scientists in the future will not abuse their responsibilities.

The basic issue would seem to resolve itself down to this: Can man do anything to modify his own destiny in the direction of mental health and normality? If so, do we not have the obligation to utilize all known methods eclectically according to the highest standards of time and place? Our own interpretation of world history is that the highest accomplishments have been the result of rational intellectual problem solving activity. The man is lost who sits passively and rationalizes life as being determined by forces over which he has no control. Admitting that most of man's destiny is controlled by forces larger than himself, the possibility of controlling even a small percentage of events may tip the scales in desired directions. The methods of the concentration camps have told us what can be done to break man's integrity and produce unhealthy styles of living. Let us show what scientific methods executed under the most honorable auspices can do in creating healthy ways of living. *Positive* mental health is not just the absence of disease. It depends on the existence of creative, health-giving factors in personality.

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A STUDY OF ROGERS' 'REFLECTION' HYPOTHESIS

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From among the many theories about psychotherapy, it is difficult to find tested and testable hypotheses. One exception is Rogers' statement regarding *reflection* which he defines as a type of response to the client in ". . . which (the counselor) is trying to understand from the client's point of view and to communicate that understanding"[7, p. 452]. In contrasting the client-centered viewpoint with Fenichel's statement on transference as seen in psychoanalytic therapy, Rogers states, "The client-centered therapist's reaction to transference is the same as to any other attitude of the client: he endeavors to understand and accept"[7, p. 203].

This investigation is a report on the responses clinically trained and untrained (lay) people make to hypothetical counseling (psychotherapy) situations via pencil-and-paper methods. The hypotheses on which this research is based are the following:

> *First:* That untrained people will respond to hypothetical counseling situations primarily in terms of non-reflective choices (probing, interpretation, support, etc.).
>
> *Second:* That untrained people will respond to hypothetical counseling situations in essentially the same manner whether they simulate the counselor's or the counselee's role.

Further elaboration of the second hypothesis includes the prediction that untrained people will structure the hypothetical counseling situation so strongly in the direction of non-reflective responses that whether the respondents are asked to simulate the counselor's or the counselee's role will make no difference, and in both cases they will veer significantly in the direction of non-reflective responses.

> *Third:* That trained clinicians (psychologists, social workers, psychiatrists) will choose the reflective responses at a level significantly greater than chance.

The third hypothesis includes the prediction that the trained clinicians will choose reflective responses even though they are not adherents to the Rogerian school of therapy.

Method and Procedure

Twenty paragraphs embodying hypothetical counseling situations[1] were presented together with five possible responses to the statement of the client. The five choices include the following: *E* (Evaluative), *I* (Interpretive), *P* (Probing), *S* (Supportive) and *U* (Understanding, or reflective, the Rogerian type response).

An example paragraph with the response choices is the following[6, p. 18]:

> "What's the use of anything? No one plays fair and square with a guy. The fellows who stayed at home got all the plums. They all took advantage of us while we sweat it out at the front. I hate their guts—every one of them. They are all double-crossers. And my wife — (long pause)."
>
> *U* (a) You feel they took advantage of you and it really makes you boil.
>
> *E* (b) I understand how you feel about that but it's going to block you from getting ahead if you don't try to get away from it.
>
> *I* (c) You've been taken advantage of and it makes you pretty mad. Well, that's natural.
>
> *S* (d) You've got lots of company with your anger. It's justifiable in so many cases. But you'll forget it as time goes on and you get established again.
>
> *P* (e) You started to say something about your wife."

[1]Modified and adapted from Blocksma and Porter[1] and from Porter[6].

Two sets of directions were used. One set, the simulated counselor directions, asked the respondents to choose from the five possibilities associated with each paragraph, the one they would choose as a response to a person who said to them in therapy (or in counseling) situations what was stated in the paragraphs. The other set of directions, the simulated counselee directions, simply asked the respondents to pick the reply they would expect to hear if they (the respondents) had said to a counselor or therapist what was stated in the paragraph.

Sampling

One high school class, a group of 87 juniors and seniors, took the questionnaire following the simulated counselor directions. The other class, 41 juniors and seniors, followed the simulated counselee directions.

The three university classes were: simulated counselor's role, N = 62; simulated counselee's role, N = 66. A third class, N = 50, took the questionnaire on two occasions simulating the counselor's role in order to determine the consistency of their responses.[2] These groups were tested before any topics bearing on personality or related subjects had been presented.

The expert group, consisted of 21 clinicians with a minimum of about 5 years experience in psycho-therapy, almost all of whom had had at least two years of psychoanalysis. The clinical-students group was composed of 28 first and second year graduate students with from little to as much as four or five years clinical experience although all had taken a number of courses in clinical subjects. Both clinical groups simulated the counselor's role in therapy in responding to the questionnaire.

Results

On the basis of chance determination of responses to the twenty paragraphs, where there are five choices for each, the probability of each category being selected is 20 percent. A Chi Square array is used to compare empirical with theoretical results in the selection of the categories.

Table 1. Responses to Twenty Paragraphs for Six Groups. Chi Square Tests and Percentage Breakdowns for each Group Where Theoretical Expectancies Would Be 20% for Each Type of Response

Type of Response	High School		University		Clinician Counselor	Clinical Student Counselor
	Counselee	Counselor	Counselee	Counselor		
E	24.39%	24.54%	21.97%	24.76%	04.05%	05.00%
I	27.56	25.80	23.48	22.09	09.76	14.47
P	20.49	21.95	24.02	27.50	27.86	34.29
S	20.00	22.82	17.80	20.42	02.62	09.28
U	07.85	04.31	12.73	05.23	55.71	36.96
N	41	87	66	62	21	28
x^2	94.21	256.17	58.78	186.77	419.89	241.44*

*All significant beyond .01 level except "University Counselee" failing to reach the .10 level. (5)

The first hypothesis states that untrained people will respond to the questionnaire primarily in terms of non-reflective types of answers. Table 1 presents the Chi Square test and the percentage replies for each category, each group. The two high school and the two university groups comprise the untrained (lay) sample. It is clear from Table 1 that each of these four groups deviates significantly from the

[2]The test-retest period was 10 days. The percentage of *identical* responses between the two sessions was 65.2; the retest was given without warning, of course.

theoretically expected and, moreover, inspection shows the *U* category to be the smallest of the five, by an appreciable margin, in each of the four groups. Hence, considerable weight is placed in support of hypothesis one.

Hypothesis two asserts that the Directions used—i.e., whether respondents simulated counselor's or counselee's role—would make no real difference in preferential choices of categories. Comparing the two high school classes with each other, and the two university classes with each other, we see from Table 1 that the differences in each case are relatively minor, except for the "University Counselee" group which most closely approximates a theoretical distribution but shows the smallest percent of choices in the *U* category. Furthermore the *direction* of preferences in both groups is the same. Clearly the *U* response is the least preferred by both groups, for both sets of directions.

The third hypothesis is also substantiated as can be seen by inspecting the results from the two clinical groups and by comparing their respective distributions with those of the first four, untrained groups. The only category that holds up for all six groups is that of *P*, probing. The writer suspects that the clinician is far more perceptive in his asking for "further information" than is the untrained person. However, within the limits of this study, both groups seemed to be saying, "When in doubt, ask for more information." Even though the clinical groups strongly supported the Rogerian hypothesis on reflection, they tended to differ from Rogers concerning the *P* category. It is not at all clear what advantages, if any, accrue from more information; especially from the Rogerian viewpoint, more information is certainly not an aim of therapy. Whatever it's broader meaning, it seems clear that the *P* category is considerably different from *E*, *I* and *S* categories, so far as their employment by the experienced and mature therapist is concerned; this appears true for the embryonic clinician, too.

Discussion

These results may be contrasted with those of Fiedler[2], who showed on the basis of Q-technique ratings that lay persons (N = 3) had about the same capacity to judge the verbal makeup of a good therapeutic relationship as did experts. There are several remarks to be made regarding Fiedler's and the present writer's results.

First, the Q-sort is based on items highly abstracted from the therapeutic situation. There is some doubt whether Fiedler's study was based on *relationships* at all. Two other studies by him[3, 4] appear to come much closer to an investigation of relationships. Possibly the results in the first study[2] place the clinicians at a disadvantage in comparison with lay persons, primarily because the real significance of therapeutic relationships is lost in the banalities one is asked to sort.

Second, Fiedler's naive subjects were scarcely naive since one had been analyzed and a second person was the wife of a therapist. These are hardly suitable criteria for naivete. Our present sample of 256 high school and university students appears to support the contention that naive subjects do, indeed, envisage therapy situations different from clinicians.

Third, what one *does* in the therapy setting betrays, so to speak, one's attitudes. In this study respondents were asked to select one response, from among five; this forced them to take action, make a decision, which is far more definitive than asking respondents to categorize descriptive statements.

Summary

A seemingly valid conclusion flowing from these data is that clinical skills, viewed in terms of the methods used herein, have been shown to be considerably more than a simple extension of knowledge of interpersonal relations possessed by any reasonably intelligent and emotionally mature person. This appears to be the case at least insofar as one testable notion about therapy, viz., reflection, is concerned.

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THE EFFECTS OF ALCOHOL ON HANDWRITING

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Problem

The present paper reports the first of a series of studies concerning the psychological effects of sizable doses of alcohol upon human subjects. It is a segment of multidimensional approach to the problem of changes in human functioning resulting from the consumption of alcohol.*

Numerous studies concerning the effects of alcohol upon a wide array of psychological functions have been reported and reviewed in the literature[1, 2, 4, 6]. Most of the investigations have employed rather small doses of alcohol, few subjects and artificial tasks. It is our purpose in this paper to report the effects of sizable amounts of alcohol upon a well-habituated but complex visual-motor task, such as handwriting, in a fairly large number of subjects.

Subjects and Procedure

Forty "normal" male adults, between the ages of 22 and 40, served as volunteer subjects for the experiment. With the exception of two heavy drinkers, they were all moderate "social" drinkers. A standard brand of 100 proof bourbon was given to the subjects in straight or mixed (water or soda) form, as fast as they were able to drink it. All subjects consumed, during the course of the 4½ hours session, between 9 and 15 ounces of whiskey. The drinking was done in a social setting, four subjects at a time. They usually played cards, chatted among themselves or with the several experimenters present. Occasionally, the subjects were interrupted for Alcoholmeter tests.

The handwriting test was administered as the first of a psychological test battery prior to the beginning of drinking. The first administration of the test took place at 7:30 P. M. The test was readministered four hours later, after the aforementioned doses of alcohol had been consumed.

The handwriting task consisted of copying the entire text of the Revised Stanford-Binet reading test at the ten year level ("New York, September fifth. A fire last night . . . etc."). At the conclusion each subject was asked to sign his name on the same 8½ x 11 sheet of paper. Exactly the same procedure was followed, and the same materials used, for the re-administration. Pens, ink and paper were uniform. The instructions, following personal introductions, were quite simple: "Copy this as well as you can!"

*The psychological investigations were conducted at the invitation of Prof. Ralph Turner, Department of Police Administration, Michigan State College, whose work was financed by the National Safety Council. Other participants in the psychological studies were: Dr. Alvis Caliman, Lt. Allan McMichael and Mr. Ned Papania.

Results

The handwriting samples before and after the ingestion of alcohol were compared for each individual by means of overall impression and global judgment. They were also analyzed on the basis of a number of graphological characteristics that can be readily subjected to mensuration. Finally, the relationship of changes in handwriting to the alcohol concentration in the blood was scrutinized.

Global judgment. The first 28 pairs of handwriting samples (before and after) were coded and presented to eight judges (graduate students in psychology and instructors with no specialized training in graphology). The judges were instructed to decide which sample of each pair was obtained before alcohol. Table 1 presents the data obtained. In two instances the "global" impression of the "before and after"

Table 1. Global Ratings by Eight Judges of Pairs of Handwriting Samples Obtained Before and After Alcohol Consumption (N = 28).

Judge	Number Correct	% Correct
A	28	100
B	26	93
C	27	96
D	27	96
E	28	100
F	26	93
G	27	96
H	26	93

samples was 100 per cent accurate. In no instance were more than two errors made. In most cases the effects of the alcohol were obvious and readily noted in the disorganization of the handwriting sample. In a few, the changes were much more subtle and not easily detected. The attempt to *quantify* these overall impressions followed.

Handwriting analysis. A number of measurable criteria for the evaluation of handwriting samples were obtained from the graphological literature[2, 5, 7, 8, 9]. They are listed and classified in Table 2. A few explanatory remarks are in order.

The first factor, "Time", refers to the length of time it took to copy the sample. "Top margin" refers to the distance between the top end of the page and the first written line. "Left margin" receives a similar explanation. All other factors are self-explanatory.

For each measured factor, differences between the means for the "before" and "after" samples are tabulated. The figures with a minus (–) sign before them indicate a decrease upon re-examination. All other signs show increases, presumably as a result of the effects of alcohol. The *t*'s and corresponding levels of significance are reported in columns 3 and 4 (of Table 2) respectively. It appears quite readily that 10 of the 15 graphological "signs" employed differentiate between the samples of handwriting obtained before and those obtained after alcohol consumption. Generally, it takes longer and it requires more space for a person to write the same number of words after he has consumed a fairly large dose of alcohol. The accuracy appears to be somewhat less affected. This may be due to the fact that most of the 40 subjects were well-educated persons whose daily life involves considerable written communication.

TABLE 2. DIFFERENCES BETWEEN MEANS IN SEVERAL MEASURES APPLIED TO HANDWRITING SAMPLES BEFORE AND AFTER ALCOHOL CONSUMPTION (N = 40)

Variable	Diff.	*t*	Level of Significance
I. Time (in seconds)	28.77	3.73	.01
II. Spatial factors (centimeters)			
Top margin	0.40	2.61	.02
Left margin	-0.43	3.26	.01
Right margin variability	-0.06	0.43	NS
Length of signature	0.73	4.10	.01
Total length of lines	15.42	6.43	.01
Total number of lines	0.48	4.24	.01
III. Size of letters (cm.)			
Av. size of small letters in signature	0.08	4.46	0.1
Av. size of capitals in signature	0.22	4.38	0.1
Ratio of small to capital letters	0.001	1.08	NS
IV. Accuracy			
Gross errors	2.38	3.93	.01
"i"s not dotted	-0.23	0.89	NS
"t"s not crossed	0.70	1.70	NS
Open "o"s	0.80	0.19	NS
Open "a"s	1.55	3.49	.01

Handwriting and blood alcohol. Measurements by means of the Alcoholmeter indicate a range in peak alcohol concentration in the blood from 0.54 to 1.75 milligrams per C. C. in our subjects. The number of graphological signs showing the group direction ranged from 5–10. The computation of a coefficient of correlation between the two yielded $r = -.084$. Thus, we might conclude that there is no relation between the level of alcohol concentration in the blood and degree of change in handwriting based on the criteria employed. It is possible that had there been more criteria employed, some relationship would have been obtained.

DISCUSSION

The results have indicated that the amounts of alcohol ingested by our subjects affect their handwriting quite markedly. These results are even more significant in view of the fact that the subjects were much more familiar with the material to be copied upon readministration. Under ordinary circumstances a speedier and more accurate performance might have been expected due to practice effect. The results, however, show a retardation, less fine motor coordination (using more space) and less accuracy in this well-habituated activity on the part of our subjects. The reduced accuracy also points in the direction of more serious involvement of the central nervous system and the so-called "higher mental processes".

An important question to be answered is whether consumption of lesser amounts of alcohol will produce such clear-cut differences. There is a need for further work

on the relationship between this type of performance and varying amounts of alcohol. Then, the standardization of a handwriting test as an index of amounts of alcohol consumed may be considered.

Summary

Forty adult male subjects consumed from 9 - 15 ounces of whiskey each. A comparison of handwriting samples obtained before and after the consumption of alcohol yielded significant differences. The subjects took more time, used more space and were less accurate in copying a sample paragraph and signing their names. Ten graphological signs proved to differentiate between the "before" and "after" alcohol samples with a high degree of confidence. No relationship between the incidence of the graphological signs and degree of alcohol concentration in the blood was found. Implications for further research and for practical application were discussed.

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THE USE OF THE BENDER GESTALT WITH AN ALCOHOLIC AND NON-ALCOHOLIC POPULATION

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Introduction

Perception plays an important role in determining the responses which emerge when projective type tests are employed. Projective tests are in reality perceptual tests. Since projective techniques depend in one way or another upon perceptual mechanisms utilized by the individual, it becomes important to have some understanding of the perceptual processes. The contemporary view developed by such people as Piaget, the Rorschach workers, clinical psychologists, and projective psychologists, emphasizes the notion that every individual lives in a more or less "private world".

Koffka[2] and Sherif[5] make perception pretty much an individual process when they point out that what is called the outer world (Koffka's Geographical Environment) is never so completely unstructured as to make perception depend entirely upon the perceiver. On the other hand, the outer world is not so clearly structured as to eliminate individual differences among perceivers. The relationship between perceptual theory and projective techniques is clearly sensed by Gardner Murphy when he says: "The way a person looks at the world is a more adequate preliminary clue than anything he does. This is the primary reason why clinics have found that they need perceptual tests."[3]

This study was designed to explore the possibility of using the Pascal and Suttell method[4] of scoring the Bender Gestalt test to discriminate between normal and alcoholic groups. Although Bender, Curran and Schilder[1] have studied alco-

holic psychoses and Korsakoff's syndrome, the literature contains little concerning the use of the Bender Gestalt with nonpsychotic alcoholics. The hypothesis to be tested is that there are qualitative differences between the perceptual processes of alcoholics and non-alcoholics. An attempt will be made to differentiate a syndrome or unique configuration of signs unique to alcoholics by empirical methods, and also to test the validity of some claims made by Pascal and Suttell.

Method

Defining a non-alcoholic as a person who did social drinking but who was not and had never been a member of Alcoholics Anonymous (AA), a sample of 25 male non-alcoholics were matched on the basis of education, age, occupation and economic status with an experimental group of 25 adult males who were members of Alcoholics Anonymous.* These criteria of selection are admittedly arbitrary but at least it may be assumed that the AA members are genuine alcoholics.

One limitation imposed by using this sample involved the complete absence of the total abstainer or "teetotaler" who may either be a normal person or a potential alcoholic. Also, the possibility of including pre-alcoholics, potential alcoholics or psychoneurotics in our control group was not ruled out.

The method of Pascal and Suttell was used in obtaining the Bender Gestalt scores. This system is subject to error but the authors state that "With reasonable care the beginning scorer should, by the time he has scored 20 records in this manner, be scoring within four or five points of the authors."[4]. Following these instructions, it was found that our scoring averaged plus 3.6 points above Pascal and Suttell as compared to a 4 or 5 point difference in scoring between these authors themselves. Within this margin of error, the reliability of our scoring appears comparable to that of Pascal and Suttell.

One defect of our experimental design is that the author knew whether or not he was scoring an alcoholic or non-alcoholic record. Undoubtedly this produced some error in scoring but every objective means was used to limit this kind of error.

Results and Discussion

The results showed a 20 point difference between mean scores of the two groups. The individual scores also showed a consistent difference between the two groups. There was some overlapping, but the control group tended to make scores below 59 while the experimental group made scores above 59. These results support the hypothesis that there is a significant difference of mean scores between alcoholics and non-alcoholics.

The *t* test was applied in order to see if these mean score differences were attributable to chance. This yielded a mean score difference significant at the one tenth of one percent level of confidence. The F test was then applied to test the homogeniety of variance and yielded a difference in variance significant beyond the one percent level of confidence. This meant that one of the basic assumptions of the *t* test had been violated and therefore was inappropriate and cannot serve strictly as the basis for for valid conclusions. It is believed, however, that such a high level of confidence obtained from the *t* test is indicative of some real difference in spite of the lack of homogeniety of variance.

The mean score of the normal group in this study was 52.68 while the alcoholics' was 72.68. This is in close agreement with Pascal and Suttell's mean scores of 50 for normals and 68.2 for neurotics.

These results indicate the alcoholic and the non-alcoholic can be differentiated using the signs proposed in this study. It should be pointed out, however, that these signs are empirical in nature and were not found by a *priori* methods, and that some

*Pascal and Suttell found a bimodal distribution in standardizing their scoring system. Education was the only variable which seemed to account for this, i.e. whether one had one year of high school or one year of college.

TABLE 1. TABLE OF F. RATIOS AND *t* RATIOS

Groups	Mean	Standard Deviation
Control	52.68	7.18
Experimental	72.68	12.94
t Ratios	6.62*	
F Ratios	3.26**	

*A *t*-ration of 6.62 is significant at the .001 level of confidence.
**An F-ratio of 3.2 is significant at the .01 level of confidence.

signs may discriminate the two groups in nothing more than a coincidental way. Nevertheless, the clarity with which they separate the two groups leads us to suspect that they may be related to our experimental variable.

PROPOSED ALCOHOLIC SIGNS

When interpreting the signs about to be discussed, it must be recognized that no one sign has any absolute diagnostic value. Interpretation of these signs as in the Rorschach cannot be done atomistically. In rendering a diagnosis, the whole configuration must be considered. For example, the presence or absence of sign two has diagnostic value if the proper pattern is present. In general most of the signs are independent. However, sign two is functionally related to sign three and four as far as the experimental group is concerned. Empirically, the following signs seem significant:

1. A Z score of at least 59 but not over 91.
2. Rotation of design seven at least five degrees to the left but not more than 20 degrees. By rotation two things are meant:
   a. When the whole design is rotated so that the top point of the figure is five degrees or more from a perpendicular base.
   b. When the top point is rotated but not the rest of the design. Here the base line of the protractor is not an imaginary perpendicular but the point at the bottom of hexagon one. This type of rotation results in a misjudgment of the top angles of hexagon one.
3. If rotation of hexagon one is less than two degrees left, then distortion of the gestalt may be expected. The term distortion is a subjective term and thus is difficult to describe objectively. This is considered the weakest sign, not because of its lack of frequency of occurence but because of the difficulty in pinning it down. By distortion several things are meant:
   a. When there is disproportion between the sizes of the two hexagons, one must be approximately twice the size of the other.
   b. When the two hexagons do not overlap or when they overlap excessively.
   c. When the design is otherwise reproduced in a markedly distorted manner that approaches destruction of the Gestalt.
   d. When there is extreme elongation of either hexagon 1 or 2.
4. If rotation is less than two degrees left then a total score of not less than three should be expected on design seven.
5. Counting of the dots by the subject on design five.
6. A score of two or more on design five.

After comparing the performance of each group with respect to the proposed alcoholic signs, the following tentative generalizations were made:

1. If the Z score is less than 61, then at least three of the signs should appear.
2. If the Z score is 61 or more, then four of the signs should be evident.
3. If sign two is not present sign one must be.

Upon the basis of our signs and the generalizations drawn from them, only one member of our experimental group failed to meet these criteria. The fact that our signs discriminated 24 out of 25 of the alcoholics suggests their predictive value. But, before any claims can be made without qualification, a validating study should be conducted to determine whether another sampling of alcoholics and non-alcoholics will demonstrate such signs and to the same degree.

It can, of course, be argued that other populations may demonstrate such signs. This is a possibility which warrants further investigation. The author in a non-systematic way has explored such a possibility. His casual observations tend to support the thesis tnat these signs are unique to an alcoholic population and perhaps also to a pre-alcoholic population.

In our control population only four met the alcoholic criteria. These cases might either be false positives or they might be alcoholic or pre-alcoholic. Once it was discovered that four individuals had met the alcoholic configuration, they were interviewed. It was found that case No. 5 went to AA meetings but was not a member. He also expressed negative attitudes in regard to alcohol. It was found with respect to case No. 14 that his co-workers considered him an alcoholic. Unfortunately the investigator was unable to obtain much information about case No. 19 and case No. 12. With respect to case No. 19, it can be reported that he was the most cautious individual tested. With respect to case No. 12, no information was obtained because the subject was no longer available. This evidence is, of course, not conclusive but it is highly suggestive and tends to support the validity of our signs.

Summary and Conclusions

The Bender-Gestalt Test was administered to 25 alcoholics (AA members) and to 25 normals (social drinkers, non-AA members). A comparative analysis was made, and the following conclusions were drawn:

1. The experimental group consistently made higher scores than the control group. The Bender is a perceptual test. The data indicate that the experimental group demonstrated more perceptual variation than did the control group. This was taken as tending to confirm our original hypothesis, that there is a significant difference of mean scores between alcoholics and non-alcoholics.
2. Certain signs, derived empirically from this study, tend to differentiate the alcoholic from the non-alcoholic. It is believed, on the basis of the rationalizations made, they will differentiate alcoholics from non-alcoholics.
3. These signs and the generalizations drawn from them are unique to an alcoholic population and perhaps to a pre-alcoholic population. However, more experimentation is necessary before certainty can be approached.
4. Pascal and Suttell's claims with respect to scoring as well as their normative data in general were supported.

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BENDER-GESTALT PERFORMANCES OF SCHIZOPHRENICS AND PARETICS[1]

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Problem

An objective scoring system for the Bender-Gestalt Test has recently been published by Pascal and Suttell (7). This has made possible a degree of quantification and standardization of this test which has hitherto been impossible because of the usual more or less intuitive way in which the Bender-Gestalt has been evaluated (1). Briefly, Pascal and Suttell's technique involves judgment by the psychologist of the presence or absence of ten to thirteen deviations on Designs 1-8, and seven deviations in configuration, as explained in their definitive training manual. The purpose of this study was to compare the performance of schizophrenics and paretics on the Bender-Gestalt Test as scored by the Pascal and Suttell technique.

Method

The S's were 24 schizophrenic and 22 paretic patients in the Veterans Administration Neuropsychiatric Hospital at Palo Alto, California. The S's were white males between 50 and 61 years of age. In the selection of the samples by the ward psychiatric staffs, an attempt was made to equate the two groups with regard to "degree of psychiatric illness," or "severity of the psychosis." While this type of equating is at best approximate, it appears necessary in order to guarantee that obtained differences are due to type of disorder rather than simply to severity of psychosis. Because of the manner in which the samples were drawn, we cannot be absolutely certain that some schizophrenic S's did not have minor, undetected organic pathology, particularly because of their age, but there can be no doubt that the groups differed in amount of gross organic pathology. Detailed description of the samples has been provided by Irvine (4).

The Bender-Gestalt was administered by three clinical psychology interns following the instructions of Pascal and Suttell. The test protocols were scored independently by two interns (N. R. and S. B.) who had fulfilled the self-training program presented by Pascal and Suttell. Neither administrators nor scorers were informed of the diagnosis of the S's.

Results and Conclusions

Table 1 presents the comparative data for the two samples in terms of raw scores obtained by one scorer (S. B.). These data suggest that the Bender-Gestalt as scored by this system is sensitive to cortical deficit as well as to degree of mental disorder, although the great overlap precludes the use of a score for the differentiation of schizophrenic or organic deterioration in an individual patient.

Because these samples were being studied by several other investigators, certain incidental correlational data were obtained: a significant r (−.39) between B-G score and V on the Concept Evaluation Test (5); insignificant correlations between B-G score and rate of fluctuation of the Necker cube (6), number of Rorschach responses (6), J on the C. E. T. (5), "good" and "poor" alpha (8), CFF (4), and homogeneity on a word-association test (2).

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[1]From Veterans Administration Hospital, Palo Alto, California.

[2]This study was made possible by the Manager and staff of the Veterans Administration Hospital, Palo Alto, California, and by the helpful assistance of the following: P. McReynolds, C. L. Winder, Q. McNemar, S. Bensen, N. Nemor, and R. E. Billings.

TABLE 1. DISTRIBUTION AND STATISTICAL COMPARISONS OF BENDER-GESTALT RAW SCORES OF PARETICS AND SCHIZOPHRENICS.*

Score Intervals	Paretics	Schizophrenics
115–129	3	0
100–114	0	2
85–99	3	2
70–84	1	2
55–69	5	2
40–54	8	5
25–39	2	6
10–24	0	5
N	22	24
M	67.32	49.62
Sigma	28.81	28.55
t	= 2.08	P <.05

*Calculations were made on the basis of 12 intervals.

TABLE 2. MEANS AND STANDARD DEVIATIONS OF BENDER-GESTALT STANDARD SCORES OF PARETICS, SCHIZOPHRENICS, UNCLASSIFIED PSYCHOTICS, AND NORMALS

	Pascal and Suttell		Present Study		
	Normals	Psychotics	Schizophrenics	Paretics	Total
N	271	136	24	22	46
M	50	81.1	83.6	102.4	92.6
Sigma	10	Not given	29.61	29.81	31.16

Table 2 presents data comparing our groups with normals and psychotics with no known cortical deficit as described by Pascal and Suttell. For this comparison, the scores on our S's were translated into standard scores according to the norms presented by Pascal and Suttell.

The critical ratio of the difference between means of our schizophrenics and of the reported normals was 5.59. The data suggest that the Bender-Gestalt significantly discriminates psychotics from normals, but this interpretation perhaps should be qualified somewhat because the norms published by Pascal and Suttell for ages 15-50 are of doubtful applicability to these samples.

The reliability between the two scorers was .97 on the groups combined. This coefficient, while directly pertinent to the present study, cannot be interpreted as representative of the reliability of Bender-Gestalt scoring in the typical clinical situation. On the present case, the heterogeneity of the samples was unusually great and extreme care was exercised in the scoring. It is further emphasized that the coefficient obtained reflects reliability of *scoring*, not of the variable per se. Approximately 30 hours were required to learn the scoring system. An average of 7.2 minutes for administration and 15 minutes for scoring was required for our tests. Thus it would seem that the method is reliable and less time consuming than Billingslea's method [3].

Summary

Bender-Gestalt protocols of 22 paretic and 24 schizophrenic males, ages 50-60, matched as groups for "degree of psychiatric illness," were scored according to the Pascal and Suttell technique. The fact that the raw score means of the groups, 67.32 and 49.62 respectively, differ at the $P < .05$ level, implies that the Bender-Gestalt so scored is sensitive to cortical deficit, although overlap precludes diagnostic use of the scores. Our data also support the finding of Pascal and Suttell that psychotics may be differentiated from normals by this system.

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THE IDENTIFICATION OF PATHOLOGICAL CEREBRAL FUNCTION THROUGH THE H-T-P TECHNIQUE*

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Introduction

Clinical experience has convincingly demonstrated that subjects with abnormal cerebral electrical functions manifest characteristic modes of drawing certain prescribed objects in a manner which makes possible their differentiation from subjects who manifest normal cerebral electrical functions. The clinical-experimental literature, for example, Koffka [7], Wertheimer [12], Goldstein [5], Piotrowski [8], Straus and Lehtinen [11], Bender [2], and Anastasi and Foley [1], has contributed additional qualitative data which suggest the need for more systematic experimental studies by means of which psychometric materials could be used to predict abnormal patterns of intracranial organic pathology. These indices thought to be pathognomonic of cerebral organic disorder could be subjected to quantitative analysis by devising rigorous procedures and would thereby give them meaning and general acceptance even by those who are impatient with inductive and inferential methods.

The purpose of this paper is to investigate possible indicators of abnormal cerebral electrical dysfunction on the H-T-P test [3] and to subject these to statistical validation.

Method

The population consists of 50 white males ranging from ages 8 through 16 committed to the New Jersey State Diagnostic Center for study and classification. They are approximately of the same socio-economic group and classified in the range of dull-normal to normal intelligence.

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*Paper read at the Twelfth Annual Meeting of the Society for Projective Techniques and Rorschach Institute, Inc.; National Meeting of the American Psychological Association, Chicago, Illinois, September, 1952.

The population of 50 subjects consisted of two groups of twenty-five subjects each, one with normal cerebral electrical function and in the other group it was abnormal, as diagnosed by Ross.[1] The electroencephalographic findings were normal when the tracings showed bilateral symmetry and the dominant parietal and occipital frequencies were in the 8-12 per second range. Slower frequencies than 8-12 per second in the 8-12 year old subjects were considered to be within normal limits where they did not exceed the limits of Knox and Finaly's[4] distribution curve. Tracings showing distorted wave forms of frequencies greater than 14 and slower than 7 per second with the exception of the 18-20 per second were considered abnormal. For the purpose of this study no differentiation was made into focal, paroxysmal or generalized abnormalties. Further details of criteria used in this study are found in reference [4, 9, 10].

After the H-T-P had been administered individually to the members of both groups the drawings were examined by the judge[2] without any knowledge on her part of the E.E.G. findings. The entire focus of study was placed on six variables, derived from Buck's system of scoring categories.[3]. It was hypothecated that these variables would enable differentiation between individuals with normal and abnormal electro-cortical patterns. Low scores in the areas of details, proportion, perspective, drawing time consumption, line quality and criticality were the anticipated variables and compared with the criterion (E.E.G.) by Chi Square methods.

Results

Table 1. Comparison of the Six H-T-P Categories With EEG Records by Means of Chi Square and Probabilities*

Signs	Electroencephalogram		
	X^2	df	P
Detail	.11	1	.50
Proportion	.85	1	.40
Perspective	.85	1	.40
Time†	—	—	—
Criticality	1.40	1	.25
Line Quality	4.40	1	.05
Total	1.60	1	.20

*The resultant Chi Square was interpreted by reference to Fisher's Table of X^2 in which conversion to commensurate probability levels was made possible. Thus the significance of difference between frequency assignments made on the basis of the categories (i.e., positive or negative for both criterion and predictors) was determined.

†Omitted since variable was scored almost completely in the positive direction making statistical analysis unnecessary.

Examination of Table 1 reveals that there was a statistically significant level obtained for only one of the six categories. This was for Line Quality for which the probability value was approximately .04, i.e., slightly better than the 5% level of significance. While Criticality and Total Score (sum of all "predictor variables") were not significantly related to the criterion, they nevertheless tended toward significance. Thus the only variable which showed relationship as a predictor of the criterion was Line Quality.

It is not surprising that Line Quality should reflect cerebral pathology. One has only to consider a few of the characteristic drawing and writing disabilities of known clinical syndromes such as Parkinsonism, athetosis, paresis, the pre-senile dementias, cerebellar degenerative disease and the tremor associated with cortical degeneration of chronic alcoholics. In most of these instances specific coordination centers are severely and selectively damaged. Any process that does not selectively destroy one modulating center such as the substantia nigra, globus pallidus, putamen, cerebral cortex or cerebellar nuclei, but that damages a little of each or a little

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of several can logically be expected to affect the final common function manifest by Line Quality.

Discussion

Line Quality may be analysed more specifically under the following subheadings:

In *Motor Control*, the average person should have little difficulty in drawing relatively straight lines. His "corners" should be rather sharply defined and his "curved lines" free-flowing and controlled. Impairment in Motor Control suggests some central nervous system disorder with the degree of deviation as a partial measure of the magnitude of the organic or functional disturbance.

In *Force*, heavy black lines should be interpreted in accordance with the generality and specificity of their employment. If not such, a central nervous system disorder may be suspected.

In *Type*, inspection should be made as to shading, as to whether the lines are interrupted or continuous, and whether they are rigid, straight, flowing or curved.

For *Consistency*, variation from the conventional type of line for a given whole is apparently pathoformic—so also is marked type and force vacillation within a given whole. The House, as a rule, requires straight lines. The Person generally demands many curved lines. The Tree usually requires a combination of the two.

Although Criticality was not statistically significant but tended towards significance, it is worth bringing forth its possible relative direction of intracranial organic pathology. The ability to view one's work objectively, to criticize it, and to profit by that criticism is one of the first intellectual functions to suffer from the presence of strong emotionality and/or organic deteriorative processes. Goldstein and Scheerer[6] have shown through their test on concrete and abstract thinking that frontal lesions remove ability to think abstractly and critically. This is further evidence of an empirical nature that Criticality on the H-T-P may similarly relate to some form of brain impairment. Piotrowski's[8] sign 9, *perplexity*, which is one of his ten central nervous system disorder signs seems to relate with Buck's Criticality . . . . since in both cases the subject tends to distrust his own ability.

Conclusion and Summary

In this study we have attempted to use statistical-empirical methods in analyzing the relationships between scoring categories on a prominent projective technique and a selected criterion of cerebral electrical functioning, namely, the electroencephalogram interpreted by an EEG consultant. The results indicate that the H-T-P category "Line Quality" bears a significant relationship to the EEG as a predictor of psychopathology. In addition, the scoring categories taken together tend toward significance as predictors of inbalance of electro-cortical field.

The writer interprets these relationships as pointing up the need for and the direction which should be taken in further studies employing the H-T-P in this manner since this study was pilot in nature and preliminary in design.

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AN ANALYSIS OF AN OUTPATIENT RATING SCALE

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PROBLEM

The purpose of this report is to present findings from two factor analyses of scale variables included in the *Multidimensional Scale for Rating Psychiatric Patients* (MSRPP). This schedule has been developed to provide a quantitative description of psychiatric outpatients as seen in diagnostic or therapeutic interview, and a measure of change in clinical status. The *Multidimensional Scale* consists of 49 unlabelled, randomly presented graphic rating scales designed to measure manifest behavior, symptoms, complaints, and inferred attitudes and needs. A rating is made by encircling the entry most typical or characteristic of the patient during the period observed. Agreement between independent raters has been found to be satisfactory. The form is intended for use by clinical psychologists and psychiatrists.

The following two scales illustrate characteristic forms of the MSRPP.

HOW EMOTIONALLY RESPONSIVE IS HE? DOES HE TEND TO UNDER-REACT OR OVER-REACT TO SITUATIONS?

1	2	3	4	5	6	U
A marked over-response	A distinct over-response	A little more than adequate response	A little less than adequate response	Inadequate response	Little or no sign of response	

COMPARED WITH OTHERS HOW HOSTILE IS HE? DOES HE BEAR LITTLE HOSTILITY OR A HIGH DEGREE OF ILL-WILL, RESENTMENT, BITTERNESS OR HATE?

1	2	3	4	5	6	U
No hostility	Relatively low	Less than average	More than average	Relatively high	Extremely hostile	

PROCEDURE

The subjects for this study consisted of 184 veteran patients receiving psychotherapy in four mental hygiene clinics. Each patient had been seen for a minimum of four therapeutic sessions and the typical patient had been receiving therapy for about three months. The raters were staff psychiatrists, clinical psychologists, psychiatric social workers, and advanced clinical psychology trainees. A detailed rating guide was attached to the original rating schedule of 73 scales. Raters in each clinic were also provided practice sessions in making ratings and opportunity to discuss doubtful or ambiguous points.

A frequency distribution was prepared from the ratings on each scale variable. The distributions were dichotomized as close as possible to the median, and the ratings were categorized as above or below the median. The intercorrelations computed between scale variables were tetrachoric coefficients taken from tables based on the cosine formula. The 73 x 73 correlational matrix was carefully and systematically searched to identify clusters of positively correlated variables. From the 14 clusters isolated, four correlational matrices were assembled. Reported here are complete centroid analyses of two matrices of 14 and 17 personality variables respectively. The rotations completed to achieve simple structure were oblique.

Table 1 presents the rotated oblique factor matrix resulting from the first analysis. Factor ER clearly represents an underlying bipolar continuum of emo-

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Results

Table 1. Oblique Factor Matrix V (Decimal Points Omitted)

Traits		Factors			
		ER	A	PA	VI
Behavior unrestrained	7	83	21	07	-07
Emotionally over-responsive	4	76	-02	06	05
Frequent mood swings	6	69	22	-15	02
Seldom hostile by rejecting or ignoring	38	52	-11	47	18
Hostility expressed overtly	37	50	-06	50	-14
Moves toward people	14	48	31	00	23
Prompt to modify behavior	13	42	66	01	-03
Externally directed attention	9	-05	63	-01	10
Free of self-consciousness	11	15	46	24	15
Seldom passively obstructive	39	38	43	01	-25
Lacking in guilt feelings	27	07	22	61	00
Little tendency to feel inadequate	53	01	03	58	44
Little need for approval of others	42	-07	23	55	-04
Strongly assertive	12	43	-07	48	30
Strong belief in himself	10	02	-01	36	57
Displays strong interests	40	36	20	07	54
Accepted in interpersonal relations	15	18	35	-10	40

tional responsiveness. One pole of the scale is characterized by lack of restraint, emotional responsiveness, mood changes, overt expression of hostility, movement towards others in social situations, dominance, flexibility, and a tendency toward strong interests. This factor appears to be related to Thurstone's[5] factor E of emotional stability and to Cattell's[3] source trait C of general emotionality.

The second factor, A, is characterized by ability to modify one's behavior, attention to matters outside oneself, absence of painful self-consciousness, absence of hostile obstructiveness, social acceptance by others, and movement towards others. It appears to represent an adaptiveness and social adjustment parameter. We will call this factor adaptiveness. It has some similarity to Cattell's source trait A of cyclothymia-schizothymia[3].

Factor PA appears to be measuring a sense of personal adequacy. Persons scoring high on one end of this scale do not have feelings of guilt or inadequacy, are relatively unaffected by a need for approval, can express hostility overtly, are dominant in relations to others, and believe in themselves. Cattell's source trait E[3], called ascendence-submission, has much in common with factor PA.

The fourth factor, VI, is characterized by a strong self belief, strong enthusiastic interests, absence of feelings of inadequacy and acceptance by others in interpersonal relations. The bipolar continuum here seems to be vigorous, confident interests in life versus weak schizoid withdrawal. We will call this factor vigorous interests.

TABLE 2. OBLIQUE FACTOR MATRIX V (DECIMAL POINTS OMITTED).

Traits		Factors			
		C	M	G	P
Unduly careful in tasks	30	66	-04	12	01
Sets high standards for self	52	59	05	-09	19
Strong concern for orderliness	29	42	-19	22	00
Strongly relies on self	21	08	56	02	00
Considerate of others	19	11	48	-10	37
Seldom blames others	34	-13	47	27	02
No use of complaints	54	-19	37	30	02
Able to control impulses	28	03	-04	66	06
Considers future in acting	26	-12	03	44	46
Strong motive for achievement	25	07	-11	34	26
Accepts responsibility	22	05	54	11	58
Seldom seeks emotional support	20	-20	28	27	-15
Little concern over conformity	31	29	-27	29	-07
Strongly persevering	16	09	27	33	33

The second rotated oblique factor matrix is presented in Table 2. Conscientiousness best describes factor C. At one end of the continuum is the individual who is unduly careful in the performance of tasks undertaken, who shows strong concern for orderliness, system and routine, and who maintains high standards for himself. This factor seems to be identical with a meticulousness identified by Barnes[1].

Factor M is defined by an inclination to rely on oneself in situations calling for independent action, by an acceptance of responsibilities, by a consideration of the welfare of others, by an acceptance rather than projection of blame, and by an absence of the tendency to use complaints. It may be described as an independent maturity versus dependent immaturity. This factor resembles Cattell's source trait G of positive character[3].

The third factor G in Table 2 is defined by an ability to delay or control impulses in favor of more remote or future satisfactions, the determination of behavior by consideration of tomorrow, and a strong metivation for recognition or achievement. This factor appears to be a goal-directed control factor. At the opposing pole of the scale is found the impulsive, ambitionless individual who is undeterred by consideration of what tomorrow will bring. Patients who have been subjected to prefrontal lobotomy might be expected to rank low on this factor.

The fourth and last factor, P, is not as well defined. An individual scoring high on this factor would be rated as accepting more than his share of responsibility as an adult, as affected by consideration of what might happen in the future, as considerate of the welfare of others, and as persevering. It should be noted that there are no significant projections on this factor from the independence variable or from need control. This factor may represent an enlightened self interest. We will call it prudence.

An examination of the cosines of the angles between the reference vectors suggests certain relations of interest. The cosines are roughly proportional, and usually opposite in sign, to the correlations between the primary vectors. The adaptive factor A in matrix C_1 of Table 3 is positively correlated with sense of personal adequacy

TABLE 3. MATRICES C_1 AND C_2 OF THE COSINES OF THE ANGLES BETWEEN THE REFERENCE VECTORS

	C_1					C_2			
Factor	C	M	G	P	Factor	A	ER	PA	VI
C	1.00				A	1.00			
M	.08	1.00			ER	.06	1.00		
G	−.58	−.49	1.00		PA	−.33	−.03	1.00	
P	.19	.19	−.19	1.00	VI	−.36	−.03	.10	1.00

(PA), and to vigorous interests (VI), but PA and VI are independent. This would indicate that there are elements in common between the factors of sense of personal adequacy and adaptiveness, and *other* elements in common between the factors of adaptiveness and vigourous interests.

An examination of matrix C_2 indicates that, while the maturity factor and conscientiousness are independent, goal-directed control is positively related to both of these factors.

SUMMARY

Ratings of manifest and inferred personality traits by therapists of 184 veteran patients receiving psychotherapy in four mental hygiene clinics were intercorrelated. Two separate centroid analyses yielded eight identifiable oblique factors.

The factors identified in the first matrix we have called adaptiveness, sense of personal adequacy, vigorous interests, and emotional responsiveness. The first three of these factors appear to relate to a common parameter of adjustment, which would be a second order factor.

The second matrix yielded factors which we have called independent maturity, conscientiousness, goal-directed control, and prudence. The factor of goal-directed control relates positively to both conscientiousness and independent maturity, but the maturity factor is practically independent of conscientiousness.

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OBSERVATIONS CONCERNING OBSESSIVE TUNES IN NORMAL PERSONS UNDER STRESS

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While obsessive thoughts are typically found in psychasthenic and other behavior disorders, normal persons are also troubled occasionally by recurring ideas which they are unable to banish. Various explanations for these phenomena have been offered. Psychoanalytical explanations, as Thorpe and Katz [3, p. 377] have noted, emphasize that early, traumatic sexual experiences have been displaced. Dorcus [2, p. 318] mentions another theory which ignores the sexual trauma and regards obsessions simply as a means of keeping the mind occupied and, presumably, away from the conflict. For the essentially normal person Cameron [1, p. 301] observes that, "Most of these recurrences seem to have no special significance for the individual, although of course it is always possible to argue that if one probed deeply enough a special meaning would emerge."

One of the more familiar forms of obsessive thinking encountered by psychological counselors is the complaint of an occasional client of "tunes in the head." Such obsessive tunes constitute convenient data for examining obsessions more closely because clients are likely to volunteer information of their existence, since they are commonly mentioned in general conversation without implications of psychopathology. Also, they are quite easy to talk about; whereas obsessions which revolve around thoughts of genitals or of homicide are painful, sometimes impossible, for the client to discuss. Further, such tunes have the advantage of being dated with fair specificity in the client's memory. He remembers fairly well when he first heard them and the circumstances surrounding them.

The present observations concern 10 persons (6 men, 4 women) who complained one or more times during a series of counseling interviews of "tunes stuck in the head." Seven of the clients were employed adults and 3 were college students. All of them were normal in the sense that they showed no evidence of gross psychopathology and all of them denied ever having previously had psychological or psychiatric treatment. All of them were currently troubled by problems which caused them to consult a psychologist, problems such as: marital discord, financial worries, academic failure, vocational indecision, and the like. Most of the clients were seen at various times during the past 6 years.

No clients were routinely asked whether they had experienced obsessive tunes. However, when a client voluntarily complained of being currently plagued by such tunes, he was asked what the tune was, what it meant to him, and when he had first heard it. He was then requested to describe his personal circumstances concerning the period when he had first heard the tune. The songs reported by the clients as being obsessive were: *Piccolo Pete, Yes, We Have No Bananas, Vo-Do Do-De-O-Do, Nearer My God to Thee, Music Goes Round and Round, Three Little Fishes, Lied Der Roten Flieger, Chicory Chick, Mairzie Doats, Pistol Packin' Mama, I Tawt I Taw a Puddy Tat, I've Got a Luvvely Bunch of Coconuts.*

When complaining of these recurring songs, none of the clients simply mentioned the title alone. Instead, a portion of the lyrics was recited, as, "Did you ever hear Pete go tweet-tweet-tweet on his piccolo?" or "Lay that pistol down, Babe, lay that pistol down." With the exception of *Nearer My God to Thee* and *Lied Der Roten Flieger*, the lyrics of these songs are nonsensically bizarre while the music appears to be fairly conventional by jazz standards. In this connection it should be noted that the recurrent tunes experienced by normal persons who were not under stress, as will be described later, were not characterized by such freakish words.

While *Lied Der Roten Flieger* is not bizarre from the standpoint of syntax, the personal circumstances of the client who was obsessed by this German Luftwaffe favorite made it painfully grotesque. This client was a German Jew who had fled

Germany in 1938. He recalled hearing the song in Germany and, after he arrived in the United States, over the short wave radio. The lyrics he mentioned as recurring included something about the *Hakenkreuzfahne* (Swastika banner) and "Höher und höher zum Himmel empor, wir stürtzen den Judischen Thron." (Approximately, "Higher and higher, upward to Heaven, we topple the Jewish throne.") Despite the fact that this client originally heard the song at a time of relief and gratitude for his escape, any other song would have been far less painful than this particular one.

Only one of the clients reported being currently obsessed by more than one tune. A 60-year old high school teacher who was greatly upset over financial problems remarked that he had been plagued by a different tune on each of 4 successive days: *Piccolo Pete, Yes, We Have No Bananas, Vo-Do Do-De-O-Do,* and on the fourth day by the French version of the banana song *Mais, Oui Nous N'avon Pas Des Ananas.* He remarked that he had never cared much for the songs and that he could not remember having heard them during the past 15 years. The songs, he recalled, were all the rage during the latter part of the 1920's and that his children sang them often. The French version of the banana song he first heard in Paris when he took his family there, a trip which he remembered as the climax of the pleasantest period of his life.

The other clients reported being obsessed at occasional intervals for only 1 or 2 days and by only one tune. However like the high school teacher, they were obsessed by songs which, though once very popular, were now out of date. *Nearer My God to Thee* is probably an exception. All clients reported first hearing the obsessive tunes at a time of life which they recalled as being very pleasant. Four of the 12 songs were first heard when in school, 3 while on a trip, 2 while out on dates, 1 while honeymooning, 1 while in church with a since deceased father, 1 during an escape from Germany. Whether or not the period during which the songs were first heard was actually a time of relative freedom from conflict cannot, of course, be actually known. Since the clients were currently in a stressful situation, the pleasantness of many past conditions may have been enhanced by contrast with the present. Whatever the true circumstances, however, it is probably significant that the clients in retrospect regarded the period as a happy one for them. In this sense, the obsessive tune represented a form of partial regression.

In 1952, when a psychology class of 307 students was requested to report the titles of any songs which had been "stuck" in their minds at any time during the past 2 weeks, 11 persons reported one song each. Eight of these songs were then currently popular as *Shrimp Boat, Domino, Shanghai.* Ten of the students, when asked, said that they did not find the songs "particularly bothersome." Several of them added that they found the songs rather pleasant to think about. The exception was a male student who found his obsessive rendering of an old song called *Macnamara's Band* "a pain". Whether or not this student was in a stress situation could not be ascertained. However, he was plagued by the lyrics which he gave in part as, "The drums go bang and the cymbals clang and the trumpets they blaze away." by contrast, only 3 of the remaining 10 students reported recurrent lyrics. The others appeared to hear only the music. In general the results of this rather casual investigation of obsessive songs by persons not under stress appear to be in agreement with the earlier quoted observation of Cameron[1] that the recurrences seem to have "no special significance for the individual."

Several differences in the character and circumstances of the recurrent tunes heard by the non-stress or classroom group as contrasted with the tunes which tormented the group of clients under stress are considered important. Almost none of the classroom group heard lyrics which were bizarre, nor did they find them irritating, and most of the tunes were currently popular. Quite the converse was true of the group of clients under stress. The clients found the lyrics senseless and rasping, and they were unable to drive them away. The classroom group, with one exception, had no wish to get rid of the tunes, for they found them generally pleasing and in no sense an intrusion. It is suggested that the bizarre characteristics of the songs which

obsessed the clients who were under stress were important in temporarily displacing the conflict. That is, a soothing song of love may be shunted aside readily in the presence of conflict. But like an aching tooth or a nail in a hiker's shoe, a grating, nonsensical lyric may be so persistent that nothing else can be thought of for a time at least, thus giving a brief respite from thoughts of conflict.

From the standpoint of psychoanalytical interpretation, the sexual symbols in the obsessive tunes which troubled the group of clients under stress is so obvious that comment is hardly necessary. The references in the lyrics to piccolos, bananas, pushing middle valves down, fish, pistols, puddies, coconuts, etc., are found in such abundance that richer grist for the Freudian mill could hardly be desired. Yet, though Freud observed that the roots of obsessions lie in repressed sexual conflict, only one of the clients was troubled primarily by clear sexual conflict. One other was beset by a variety of problems which included sexual trauma. All others were faced with problems such as financial reverses, poor academic grades, choice of job, etc. While more profound and prolonged study might have brought forth evidence of sexual maladjustment in these latter cases, it seems reasonable to assert that the sexual aspect ought to have been more apparent in their problems if it were important.

Summary

A study of obsessive "tunes in head" of 10 normal persons who were currently in a conflict situation revealed that the troublesome songs were chiefly characterized by bizarre, nonsensical lyrics as *Yes, We Have No Bananas*. None of these recurrent tunes were currently popular though most of them were at one time "hits". Since all of the songs were first heard at a happy period of the clients' lives, it is suggested that the persistent lyrics may represent a form of partial regression. A group of normal persons who were not under stress but who reported having recently experienced obsessive tunes, with one exception, did not find the songs unpleasant in any way and the lyrics were quite conventional. Most of these tunes were currently popular. The rasping, nonsensical quality of most of the tunes heard by the group of clients under stress is believed to be important for displacing and giving temporary respite from the conflicts which disturbed the clients. The conflicts experienced by the clients were varied, such as marital discord, financial worries, academic failure, and vocational indecision. Only two of the clients had problems which involved sexual conflict.

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EDITORIAL OPINION

THE PROBLEM OF "NEGATIVE" RESEARCH RESULTS

"Negative" research results are indeed a problem to the experimenter. In many instances it appears that his ego strength suffers a severe blow when the desired results fail to materialize. Having formulated a theory or hypothesis with which the researcher identifies himself consciously or unconsciously, it is indeed threatening and challenging when predicted relationships are not reaffirmed. Having invested a considerable amount of time, energy and prestige in an attempt to prove certain theories, it may be very disturbing to have all this come to naught.

In some cases, the prestige of an entire profession may be involved in the finding of negative research results. For example, in clinical psychology our professional prestige rests to a large degree upon our possession of certain diagnostic and therapeutic methods which are presumed to be valid, reliable and socially significant. Imagine our humiliation and ego deflation if it were to be demonstrated that our methods were invalid or subject to gross suspicion as to their predictive values. This situation has already developed in relation to the APA-sponsored studies of the prediction of performance in clinical psychology, in the failure to obtain clearcut differentiation in prediction studies of military personnel, and in the equivocal results which are accumulating concerning some of the best known psychological tests. What have clinical psychologists been doing when they so glibly based their predictions on results from clinical instruments whose validity has not been proven beyond reason of doubt? Clinical methods die hard. Once a new method has received popular acceptance, it may survive for 15 or 20 years in actual practice before conclusive research deals it a death blow. Many of our current methods have not yet been in existence long enough to discover their ultimate validity.

From editorial viewpoints, we believe we have detected a tendency for authors of papers with negative results to become involved in complex rationalizations and discussions of alternatives in futile efforts to defend the hypothesis which has not been confirmed. It is amusing the lengths to which otherwise scientifically critical observers will go in order to try to bolster up fallen idols. The author rationalizes this his results were not obtained under the same conditions, the sample was different, certain factors were probably left uncontrolled, the method itself is valid but not for this purpose, etc. Or, great stress is placed on results which are in the "right" direction, insignificant differences are given far more significance than they deserve, and undue reliance is placed on small sample statistics which are supposed to show that such a result (however insignificant) couldn't have been expected by chance. And often as not, the negative results from the experiment are left unpublished or are disregarded as the author continues to place great faith in authority, i.e. who am I to discredit something which all the leading authorities seem to accept?

All this seems to stem from undue reliance upon theories and from uncritical acceptance of "authorities". From the field of general semantics we have had urgent warnings about undue reliance upon dogma and authority, but it appears that even among scientists such principles are too often given only lip service. In many instances, a truly experienced scientist could have predicted the invalidity of many experimental hypotheses, so that it is no wonder that negative research results were obtained. Clinical psychology is comparable to clinical medicine in that we will never again be as confident of ourselves and our methods as when we were sophomores. We now find ourselves in the position of having few methods whose validity has been proven beyond doubt. Or conversely, most of the methods now in use are definitely suspect as far as their actual predictive value in practical situations. This statement applies to everything from the Stanford Binet and Wechsler Bellevue tests to the Rorschach or MMPI. Undoubtedly these tests measure something but

what it is and what significance it has is still a matter of question. Is not all this very discouraging to the young student grasping in thin air for something firm to depend on? Yes—if he is a believer in Gods which he cannot relinquish. No—if present uncertainties stimulate him to greater research efforts, more validly planned and appropriately executed.

F. C. T.

"DYNAMIC" PSYCHOLOGY

For some years, it has been scientifically fashionable to identify oneself with the most advanced thinking by adhering to *dynamic* viewpoints in psychology. While this inclination is very commendable, it has led to some semantic confusion due to great divergencies in the meanings with which the term has been used. Historically, several different schools of thought have laid claim to the term, treating it as their own exclusive possession.

John Dewey (1884) was first to use the term *dynamic* to describe the interaction of the organism and its environment, pointing out that the idea of environment is complementary to the idea of organism. While Behaviorism attempted to objectify the interaction between organism and environment, it was not until 1918 that Robert S. Woodworth forcibly emphasized the role of the organism-meeting-its-environment by modifying the S-R formula to S-O-R and asking the question *why?* instead of *how?* Neobehaviorism as represented by Kurt Lewin's field theory attempts to chart the situational dynamics of any psychological field expressed in terms of the positive and negative valences.

Hormic psychology is another example of the attempt to reconstruct the internal and external factors which contribute some semblance of purpose to behavior. William McDougall formulated a dynamic psychology emphasizing *conation* as the basic root of all behavior. This recognition of the basic importance of affective-impulsive behavior parallels Freudian theory in its attempt to recognize mental dynamisms such as instincts, urges, drives or propensities as supplying the motivation for behavior. Even though McDougall's work in general was discredited by successful attacks upon his instinct theory, the impact of his work lives on in such movements as the purposive behaviorism of E. C. Tolman.

But perhaps the most vociferous and insistent claims to the sponsorship of dynamic theory come from the clinical field. Morton Prince in America, but more importantly Sigmund Freud and the psychoanalytic movement, perceived that behavior dynamics could only be understood in terms of the psychology of the unconscious. To a great extent, psychoanalytically-oriented theorists have preempted the term dynamic in the last twenty years to refer to their concepts of the role of unconscious motives. Indeed, so great is the prestige of psychoanalytic dynamic psychology that in many places the nonanalytic psychologist is regarded as being out-of-date and static in his viewpoints.

Adolf Meyer's system of psychobiology represents another type of dynamic theory which seeks to understand personality in terms of its longitudinal development. His concept of the *stream of life* seeks to identify all pertinent constitutional and environmental factors which dynamically contribute to behavior. The psychobiological method is genuinely holistic in the sense that it deals with all the factors influencing the totality of personality.

While the apparent theoretical conflicts between these opposing viewpoints may seem confusing to the novice, much of the inconsistency may be resolved by recognizing that the different schools of thought are dealing with factors on different *operational* levels of personality study. Neobehaviorism deals with the dynamics of the psychological field of the organism-meeting-its-environment. Psychoanalysis concerns itself primarily with the dynamics of affective-impulsive life giving special attention to early childhood emotional conditionings and conflicts. Hormic psychology deals with the dynamics of motivation, and purposive goal-seeking and self-

controlling behavior. Gestalt psychology deals with the dynamics of perceptual phenomena and phenomenalism. Unfortunately, adherents of these various viewpoints have too frequently ignored phenomena on other operational levels.

The eclectic viewpoint in modern psychological science seeks to give proper weight to dynamic factors existing on all operational levels of personality study. Diagnosis becomes important in order to identify the etiological factors underlying any particular behavior, and in order to accomplish valid diagnosis the clinician must not only understand different operational levels thoroughly but must also be able to classify phenomena according to the operational level on which they exist. Only through an awareness of all possible etiological factors, can the dynamics of the whole personality be appraised operationally.

F. C. T.

"LOGIC" IN THEORETICAL SYSTEMS OF PSYCHOLOGY

This editorial was stimulated by the remark of a client who, while remarking on an interpretation made by a psychiatrist who suggested that the client's breaking off of treatment was an "escape" mechanism, said: "Even psychoanalysts cannot get way from the logic of their system." The client then went on to say that he had broken off treatment because he didn't think the psychoanalyst was making any progress, and also because he didn't particularly feel that he had built up a very good relationship with him. This anecdote is cited because it illustrates a frequent technical error made by therapists who are attempting to "act out" the logic of their theoretical systems.

In prescientific eras, logic and metaphysics have always been the principal tools for building up a system of knowledge. In the absence of factual empiric data, the next best thing is to try to rationalize cause-effect relationships. In the history of science, some very interesting examples may be cited concerning the failure of logic to provide correct explanations for problems which are very simply solved when empiric observations become available. The physiologist Harvey made an empiric little experiment which in one blow disproved the reasoning over a period of many centuries by some of the greatest minds who ever lived concerning the nature of blood circulation. By pressing distally along the veins on the dorsal surface of the hand to occlude the flow of blood proximally and then suddenly releasing the pressure, Harvey empirically demonstrated that the direction of blood flow in the veins is toward the heart.

Due to the slowness in developing scientific methods suitable for personality study, the psychological sciences perhaps have been the last to break away from philosophy and metaphysics with their dependence upon logical methods for evolving a system. Modern scientific psychology is now more than 70 years old but it still has not been able to divorce itself from attempts to relate its data in terms of "logical" theoretical systems. This preoccupation with logical systems is the reason for the existence of so many "schools" organized about various theoretical models. It almost seems as if when some new principle is discovered in psychology, its discoverer immediately sets to work to evolve a theoretical model which will explain the data and even serve as an explanatory system for all the facts of psychology.

It is interesting to review some of the influences of systematic psychology upon the development of clinical theory and practice.

1. *Scholastic psychology.* Where psychology has developed under theological auspices, there has been a marked tendency to try to relate new data to the theoretical tenets of the particular brand of theology subscribed to. Giving primary "logical" allegiance to the accepted beliefs of theology, this demand for consistency with accepted beliefs has led to a number of scientific errors or blind spots such as ignoral or denial of data which conflict with dogma, twisting of data to fit theoretical preconceptions, and the repression of scientific trends which seem to threaten accepted beliefs. Current pastoral psychology is characterized by a struggle to rationalize the discrepancies of dogma and scientific data.

2. *Psychoanalysis.* Starting out with some very astute clinical observations by Freud, the psychoanalytic movement has been characterized by the evolution of a complex system of metapsychology in the light of which stem many clinical interpretations and practices. A review of the psychoanalytic literature reveals the tremendous preponderance of metaphysical or dialectic contributions. This "logical" system has far outgrown its empiric foundations and research supports, and its scientific validity is much in doubt.

3. *Nondirectivism.* Dr. C. R. Rogers started out with some genuine clinical insights which led to the development of the nondirective methods of acceptance, recognition and reflection of feelings. These discoveries made a very great contribution to clinical practice. But not content with having contributed a technical tool of unquestioned value, an attempt was made to construct a theoretical system which would relate these discoveries to a general systematic position. A review of the literature on nondirectivism reveals the gradual association with phenomenology and a self-psychology which had been generally abandoned almost fifty years ago. Today, as with other systems of psychology, nondirectivism has mushroomed into a complex "logical" system based on a relatively limited and circumscribed set of empiric data.

4. *Behaviorism and Progressive Education.* The concept that most of behavior is learned and that therefore human personality can be shaped by regulation of the environmental stimuli which condition it, provided a most welcome theoretical foundation for the education movement.

The trouble with these attempts at system building is that they are based on a too limited sampling of data, and with a rather arbitrary selection of theories to fit the facts. The clinical data of psychoanalysis can be arrived at by other methods, e.g. the Kinsey reports, and can also be interpreted from other viewpoints such as that of general biology.

The appeal of theoretical systems to intellectuals and academicians has been very great. Indeed, on the American academic scene, a psychologist can get and hold a job on the basis of his being able to expound upon some theoretical system in courses which are covered by no one else in the department. In many university departments, the academic garden is split up among those who profess to have superior academic knowledge concerning how to raise rhubarb, spinach and turnips. Naturally, they jealously guard these artificially created and outdated areas of specialism, which are so closely identified with their special prestige and livelihood. Such specialism might have been defensible in the days of rational psychology when a man's value was highly correlated with the validity of his logical productions, but it is highly out of place in modern science where the highest loyalty must be given to the scientific method itself. A scientist may gain prestige by his special abilities as a technologist but he should not capitalize on the assumption of metaphysical superiority. The history of science is replete with great names whose reputation for objectivity was depleted as they strayed beyond the borders of science to speculate on the unknown.

One of the greatest dangers in clinical practice involves the temptation to base clinical actions upon speculative interpretations stemming from some systematic bias. Some of the fascinating interpretations of psychoanalysis and nondirectivism are too glibly applied to clinical situations where their validity cannot be demonstrated. He who identifies himself too closely with one of the systems of psychology must inevitably fall prey to the fallacy of being too "logically" consistent with his particular set of beliefs.

The great antidotes to "logic" in theoretical systems of psychology is a thorough going eclecticism based on operational principles. Operationism provides a corrective principle against the drawing of too-broad generalizations from behavior. Eclecticism concerns itself mainly with the factual data of science and does not concern itself with system building. No one denies the validity of the basic data of psychoanalysis or nondirectivism. It is the theoretical superstructure which is so suspect.

F. C. T.

LETTERS TO THE EDITOR

To the Editor:

I was rather surprised to see the article by Shannon and Rossi entitled Suggestions for Efficient Presentation of the Wechsler-Bellevue Object Assembly Subtest, which appeared in the October, 1952 issue of the *Journal of Clinical Psychology*, pages 413-417.

I think the enclosed reprint will explain my surprise because the identical piece of apparatus was developed and reported on in 1950—in fact, the Psychological Corporation spent several months during 1949 considering the adoption of the apparatus as standard equipment after Dr. Aborn and I had demonstrated the equipment to them.

GORDON F. DERNER, PH.D.
Director Clinical Psychology
Training Program
Adelphi College,
Garden City, N. Y.

Dear Dr. Derner:

It is with deep regret that I find that we missed your article in *The Journal of Consulting Psychology* dealing with administration of the Object-Assembly sub-test. Of course, I must sincerely state that while we were not as thorough in reviewing the field as we might have been, we did submit our article in absolute ignorance of what you had written.

In the first place let me state that the idea for conception of the formboard was Mr. Shannon's. Mr. Shannon came to St. Lawrence as a transfer student in 1949 and at that time came to me with a completed formboard for presentation of the O-A pieces. He told me he had gotten the idea and developed the formboard while doing psychological work in the army. Thus it is entirely possible that Mr. Shannon's formulation and use of the formboard may have actually preceded your development of the same instrument. However, it was because Mr. Shannon expressed no desire to patent the board that I suggested that it would be a good idea to make known to the psychological field a means of facilitating the administration of the O-A sub-test. He agreed, thus the article. Also it is evident that in our presentation of the article our motive was solely in making a contribution toward the advancement of clinical psychology.

I hope that this letter will help clarify our position in the matter. I hope to get in touch with Mr. Shannon soon to discuss the matter although I am sure he will concur with everything I have said.

Sincerely yours,

PHILIP D. ROSSI,
Assistant Professor in Psychology
St. Lawrence University
Canton, N. Y.

BOOK NOTICES

MILLER, GEORGE A. *Language and Communication.* New York: McGraw-Hill, 1951. pp. 298.

The author is a professor of psychology at the Massachusetts Institute of Technology. This book summarizes the results of scientific studies of language and communication in such authoritative manner as to make it suitable both as text and reference work.

GELDARD, FRANK A. *The Human Senses.* New York: John Wiley, 1953. pp. 365. $5.00.

Dr. Geldard is professor of psychology at the University of Virginia and a recognized authority in the field of the psychophysiology of sensation. This book will take its place as a standard reference work in the field.

BROWER, DANIEL AND ABT, LAWRENCE E. (Eds.) *Progress in Clinical Psychology.* New York: Grune and Stratton, 1952. Pp. 235. $50.0.

This book consists of section 2 of Volume I of a series reviewing progress in clinical psychology which the publishers plan to issue every few years. This section consists of 21 papers discussing (a) developmental processes, (b) applications of clinical psychology to special areas, (c) approaches to clinical psychology, and (d) professional issues in the field. The papers are all of high quality.

POWDERMAKER, FLORENCE B. and FRANK, JEROME D. *Group Psychotherapy.* New York: Commonwealth Fund and Harvard University Press, 1953, pp. 615. $6.50.

This monograph is a progress report on a research study of group psychotherapy carried out under the auspices of the Veterans Administration on a group of 124 patients. The data have been evaluated according to the method of *situation analysis* which seeks to identify and analyse the events occurring during group therapy which seem to produce positive or negative results. Methods and results are presented in convincing detail with many illustrations of the behavior and psychodynamics of individual patients.

MOUSTAKAS, CLARK E. *Children in Play Therapy.* New York: McGraw-Hill, 1953, pp. 218. $4.50.

A case book reporting play therapy sessions conducted at the Merrill-Palmer School in Detroit.

ABRAMSON, HAROLD A. (Ed.) *Problems of Consciousness.* New York: Josiah Macy, Jr. Foundation, 1952, pp. 156. $3.25.

The transactions of the third conference on problems of consciousness held on March 11-12, 1952 under the auspices of the Josiah Macy, Jr. Foundation. Unfortunately, the theoretical speculations of the participants add little to our knowledge of the subject.

Various authors. *A History of Psychology in Autobiography. Vol. IV.* Worcester, Mass.: Clark University Press, 1952, pp. 356. $7.50.

This fourth volume includes autobiographical sketches of WALTER V. D. BINGHAM, EDWIN G. BORING, CYRIL BURT, RICHARD M. ELLIOTT, AGOSTINO GEMELLI, ARNOLD GESELL, CLARK L. HULL, WALTER S. HUNTER, DAVID KATZ, ALBERT MICHOTTE, JEAN PIAGET, HENRI PIERON, GODFREY THOMSON, L. L. THURSTONE and EDWARD C. TOLMAN.

BLUM, GERALD S. *Psychoanalytic Theories of Personality.* New York: McGraw-Hill, 1953, pp. 219. $3.75.

The author is associated with the psychology department at the University of Michigan. This book succinctly summarizes the principal psychoanalytic theories of personality, giving attention not only to orthodox Freudian theory but also to alternative concepts offered by the Neo-Freudians. An excellent reference work for students and clinicians.

DEVEREUX, GEORGE (Ed.) *Psychoanalysis and the Occult.* New York: International Universities Press, 1953, pp. 432. $7.50.

A series of papers dealing with the relations of psychoanalysis and parapsychology including original contributions by FREUD, ROHEIM, HITSCHMANN, DEUTSCH, HANN-KENDE, ZULLIGER, BURLINGHAM and SAUL together with the more recent controversies in the field of telepathy in analysis.

FEDERN, PAUL. *Ego Psychology and the Psychoses.* New York: Basic Books, 1952, pp. 375. $6.00.

An interesting collection of theoretical papers by PAUL FEDERN edited and with an introduction by EDOARDO WEISS. FEDERN's ego psychology implies the necessity of evaluating ego strengths and weaknesses and the various ways in which ego libido manifests itself.

ROSEN, JOHN N. *Direct Analysis.* New York: Grune & Stratton, 1953, pp. 184. $3.75.

This is a series of papers written by a psychiatrist to illustrate the application of psychoanalysis to psychotics by the *direct analysis* and interpretation of psychotic unconscious contents. Selected cases are presented with discussion by the author and other psychiatrists.

BURLINGHAM, DOROTHY. *Twins: A Study of Three Pairs of Identical Twins.* New York: International Universities Press, 1953, pp. 92 and 30 graphic developmental charts. $7.50.

A fascinating study in developmental psychology illustrating problems of twinship and the differences in development between twins and ordinary children. The developmental charts provide a unique graphic record of various relationships in the lives of the twins.

DAVIDSON, AUDREY and FAY, JUDITH. *Phantasy in Childhood.* New York: Philosophical library, 1953, pp. 188. $4.75.

Observational and anecdotal accounts of phantasy life of children studied in social work and nursery school situations.

WOLFF, WERNER and PRECKNER, JOSEPH A. *Success in Psychotherapy.* New York: Grune & Stratton, 1952, pp. 196. $4.75.

A monograph consisting of seven papers mostly by psychologists discussing the definition and measurement of success in psychotherapy, changes in adjustment following psychotherapy, client defensiveness and circular patterns in behavior.

SADLER, WILLIAM S. *Practice of Psychiatry.* St. Louis, C. V. Mosby, 1953, pp. 1183.

This volume replaces the author's earlier *Theory and Practice of Psychiatry* (1936) and *Modern Psychiatry* (1945) which went through many printings. It is a detailed reference work discussing all theoretical and clinical aspects of psychiatry.

PATTERSON, C. H. *The Wechsler-Bellevue Scales.* Springfield, Ill.: C. C. Thomas, 1953, pp. 146. $3.75.

This monograph consists of a guide for counselors for interpreting the Wechsler-Bellevue Scales. It describes the nature of the scales, methods of standardization, administration, clinical diagnostic use, use in aptitude measurement, and the use of short forms.

COTTLE, WILLIAM C. *The MMPI: A Review.* Lawrence, Kansas: University of Kansas Publications, 1953. A review of the literature.

RICKMAN, JOHN (Ed.) *On the Bringing up of Children.* New York: Robert Brunner Publishers, 1952, pp. 243. $3.00.

Six prominent child psychoanalysts offer suggestions in essay form on problems of ensuring mental health.

Proceedings of the Second Research Conference on Psychosurgery. Washington, D. C.: Government Printing Office, 1952. $.75.

SCHNECK, JEROME M. (Ed.) *Hypnosis in Modern Medicine.* Springfield, Ill.: Charles C. Thomas, 1953, pp. 323. $7.50.

Papers on hypnosis in internal medicine, surgery, anesthesiology, dermatology, obstetrics and gynecology, psychiatry and child psychiatry, and dentistry. Concluding chapters discuss physiologic aspects of hypnosis and instruction in hypnosis.

THOMPSON, CHARLES B. and SILL, ALFREDA P. *Our Common Neurosis.* New York: Exposition Press, 1952, pp. 210. $3.50.

A series of essays presenting an extension of the work of DR. TRIGANT BURROW.

SENN, MILTON J. E. (Ed.) *Problems of Infancy and Childhood.* New York: Josiah Macy, Jr. Foundation, pp. 160. $2.50.

Transactions of the sixth conference on infancy and childhood sponsored by the Josiah Macy, Jr. Foundation. SIBYLLE ESCALONA discusses emotional development during the first year, KNUT KJELLBERG reviews W.H.O. activities, KATHERINE M. WOLF presents observations of individual tendencies in the first year, and ANN STEWART treats excessive crying in infants as a family disease.

HOYLES, J. ARTHUR. *The Treatment of the Young Delinquent.* New York: Philosophical Library, 1952, pp. 273. $4.75.

Essays discussing the problem of what attitudes the Church should take on the treatment of juvenile delinquents.

HALMOS, PAUL. *Solitude and Privacy.* New York: Philosophical Library, 1953, pp. 181. $4.75.

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